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ORIGINAL ARTICLES.

THE MORTALITY OF ACUTE LOBAR PNEUMONIA.

From a Study of All the Cases of this Disease Treated at the Massachusetts General Hospital from the First Case, in 1822, up to the Present Day.¹

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THAT acute lobar pneumonia is treated to-day far differently than was the same disease fifty years ago is a well-known fact. Has there been any change in the mortality for the better or worse; and, if so, is this change due to the treatment alone, or is it dependent rather on the changed conditions of life and constitution of the patient, or is it due to any change in the nature of the disease itself?

These and similar questions present themselves, and cannot be answered by a superficial examination of mortality statistics, but demand a thorough examination of the individual cases. To make entirely plain what is meant by this statement, let us illustrate by the following example: Suppose ten patients sick with pneumonia were treated every year at a hospital, and that in the year 1860, of these ten patients, two were over sixty years of age, two were hard drinkers, and two had organic disease of the heart; while in the year 1880 nearly all the pneumonia patients happened to be healthy young adults, an entire change in the treatment having at the same time taken place. It is evident that the death-rate in these two years would be very different, a difference which a superficial observer might claim to be due to the change in therapeutics. But if, instead of merely examining the list of diseases and results, he had examined the record of each case, it is possible he would have come to a far different conclusion.

At the suggestion of Dr. H. I. Bowditch and of Dr. F. C. Shattuck, and with the permission of the resident physician, Dr. J. W. Pratt, the writers have examined the records of the Massachusetts General Hospital from its first books in 1821 to the present time (May 1, 1889), for the purpose of throwing some light, if possible, on these questions.

But before considering the results, it may be well to review briefly some of the papers which have recently appeared discussing the same subject from

data obtained from other hospitals. Dr. Hartshorne, in a paper read before the College of Physicians of Philadelphia, in February, 1888, apparently succeeded in demonstrating that the mortality from pneumonia has greatly increased. In the quarter of a century prior to 1858, he finds from a large number of statistics of cases reported by Skoda, Balfour, Dietl, from the British and United States armies, from European hospitals, and from the Pennsylvania Hospital, that the mortality from acute pneumonia was only 8½ per cent. This certainly contrasts in a striking way with the present mortality, which was found by the Collective Investigation Committee,¹ in an analysis of 1066 cases, to be 18 per cent., and which Dr. Hartshorne has found to be stated at about 25 per cent., or more, in the large general hospitals in this country. He thinks that the disease is now practically the same as it was forty or fifty years ago, and that the increase in mortality is due to the change in treatment. To show the great evils of opium, Dr. Hartshorne gives such statistics—among others—as the following: One case in 12.56 died where the treatment consisted of bleeding and the use of tartar emetic; while where opium without bleeding was used, as many as 1 case in 3.3 died. Such statistics, it seems to us, are worse than valueless, for not one word is said as to whether the cases were old or young, feeble or strong, debilitated by alcoholic habits or not; neither do they take into consideration a possible variation in the severity of the disease, a fact which is generally recognized in the study of other specific diseases.

Dr. William Osler² gives a striking illustration of the worthlessness of statistics taken without such analysis for the purpose of defending a theory, by figures taken from the same hospital (Pennsylvania Hospital), for a different series of years, which, far from showing, as do Dr. Hartshorne's figures, that the mortality has increased, show that it has, if anything, been reduced, as will be seen by these figures:

DR. HARTSHORNE'S STATISTICS.

Years.	Mortality.
1845-'47	6.25 per cent.
1865-'67	18.50 "
1884-'86	31.00 "

DR. OSLER'S STATISTICS.

Years.	Mortality.
1848-'50	37.9 per cent.
1858-'60	21.2 "
1868-'70	22.8 "
1878-'80	32.7 "

Of 704 cases treated at the Pennsylvania Hospital since 1845, Dr. Osler finds a mortality of 29.1 per cent.

¹ Read before the American Climatological Association, June 24, 1889.

² The Collec. Invest. Record, vol. ii., July, 1884.

² University Medical Magazine, November, 1888.

Dr. Osler also gives, without special analysis, the mortality of the Montreal General Hospital and the Charity Hospital of New Orleans, as follows:

MONTREAL GENERAL HOSPITAL.		CHARITY HOSPITAL, N. ORLEANS.	
Years.	Mortality.	Years.	Mortality.
1853-'63	16.2 per cent.	1830-'39	44.6 per cent.
1863-'73	16.1 "	1840-'49	35.3 "
1873-'83	23.7 "	1850-'59	32.2 "
1883-'87	20.3 "	1860-'69	43.9 "
		1870-'79	40.2 "

Out of a total of 1012 cases at the Montreal Hospital, since 1853, there was a mortality of 20.4 per cent.; of 3969 cases treated at the New Orleans Hospital, 38.01 per cent. were fatal. The increasing death-rate from north to south, as illustrated by these hospitals, is interesting.

Osler also gives figures from the Edinburgh Infirmary as follows:

Before 1848, mortality in 567 cases . . .	36.3 per cent.
1848-1856, " " 611 " . .	21.2 "
1856 upwards, " " 548 " . .	12.7 "

A further analysis of these cases might show that this decrease in death-rate was deceptive.

Dr. Gouverneur Smith,¹ in a recent article, says that the lowest mortality from pneumonia, at the New York Hospital, occurred in the decade between 1820 and 1830; that the mortality has been rising since then, and has during the last decade reached its acme, considerably over double the earlier percentage. As he truly remarks, however: "Hospital statistics, in order to afford valuable scientific data, must be sifted and classified in groups of cases." He then goes on to say: "Without any such general and accurate figures to guide us relating either to hospital or private practice in this country, but from such sources of inference as are at hand, and from observation, it is now an accepted fact that the death-rate from pneumonia is much greater at present than it has been hitherto." This, to say the least, is a very sweeping assertion.

Recognizing the great danger of fallacious reasoning from hospital statistics, the writers have endeavored, with minds freed as much as possible from preconceived ideas, to analyze each case of acute lobar pneumonia that has been entered in the record books of the Massachusetts General Hospital. In the earlier years the table of diagnoses in the end of each record book was found to be often unreliable, and they were obliged to make their own diagnosis directly from the records. Thus, before 1830, clear cases of acute lobar pneumonia were often found among the diseases entered as "empresma pleuritis," all of which, therefore, had to be examined for this purpose. On the other hand, cases entered as pneumonia, or "empresma pneu-

monitis," in these earlier days were often clearly cases of broncho-pneumonia or of phthisis. It is evident, therefore, that statistics drawn up from the list of cases of pneumonia as entered in the table at the end of each record book would show very different results in the earlier years from those we have obtained by a decidedly longer process.

Added to these difficulties was the fact which one can hardly realize now in the day of careful record of physical signs, namely, that before November, 1864, there is no record of the temperature of the patient, and the first temperature chart was made in February, 1867, but these charts did not come into regular use until several years later. Then, too, in the earlier days, examinations with the stethoscope were first coming to be practised, and were entered in the record book as if they were a great curiosity, as these records certainly are now. In cases entered before 1835 there was often no record of physical signs, and we were obliged to infer the seat of the lung lesion from the description of the symptoms. The prolixity of the earlier records, extending over a number of pages, and the unmethodical and, as compared with recent records, unscientific manner of recording facts is very striking. It is often said that as we depend at the present day so much on the observation of instruments of precision, like the thermometer, we neglect to observe the patient; but the writers were both impressed with the abundance in the earlier records of unessential details, and the absence oftentimes of important symptoms and phenomena which should have been noted.

After these introductory and explanatory remarks let us examine the cases.

The Massachusetts General Hospital was opened for patients in 1821, and from January, 1822, when the first case of acute lobar pneumonia was admitted, up to the present time, May 1, 1889,¹ exactly one thousand cases of this disease are to be found in the records of the hospital. Of this number, two hundred and fifty were fatal, or exactly twenty-five per cent. of all cases.

The following table shows the total number of medical cases in the hospital for each year, also the number of cases of pneumonia and the number of deaths among the latter.

As until very recently the total number of cases each year was too few from which to draw conclusions of any value, we have divided the figures into periods of ten years, making seven decades in all from 1822 to 1889.

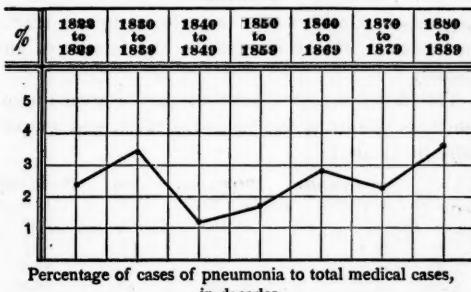
¹ The writers were obliged to wait till this late date, May 1, in order to obtain just one thousand cases. It may be remarked here that the writers examined independently alternate volumes of the records, and were interested to find how closely their number and percentages corresponded.

TABLE SHOWING NUMBER OF MEDICAL PATIENTS AND OF CASES OF PNEUMONIA IN THE MASSACHUSETTS GENERAL HOSPITAL FOR EACH YEAR.

Year.	Number of medical patients.	Cases of pneumonia.		Year.	Number of medical patients.	Cases of pneumonia.	
		Total.	Died.			Total.	Died.
1822	67	2	1	1857	418	7	1
1823	111	1	0	1858	456	19	4
1824	225	0	0	1859	530	11	3
1825	229	6	0	1860	494	15	6
1826	321	8	1	1861	543	10	2
1827	339	5	0	1862	606	13	4
1828	291	16	3	1863	703	28	7
1829	354	11	0	1864	669	24	6
1830	287	7	1	1865	390	10	2
1831	326	18	2	1866	377	9	0
1832	318	10	1	1867	459	7	2
1833	328	7	2	1868	456	12	3
1834	335	15	4	1869	544	19	7
1835	311	13	2	1870	518	11	2
1836	326	6	0	1871	563	18	0
1837	255	10	2	1872	652	21	2
1838	208	6	3	1873	691	12	4
1839	211	7	1	1874	740	20	8
1840	205	2	0	1875	852	24	8
1841	217	1	1	1876	829	20	4
1842	189	7	2	1877	687	11	6
1843	186	4	1	1878	713	17	6
1844	242	2	1	1879	658	15	1
1845	225	2	1	1880	814	33	6
1846	238	6	1	1881	830	27	8
1847	309	3	0	1882	796	38	11
1848	414	7	0	1883	701	26	9
1849	448	4	1	1884	803	39	13
1850	335	4	0	1885	918	57	16
1851	412	3	0	1886	930	39	5
1852	382	2	0	1887	1140	55	21
1853	470	6	4	1888	1285	72	21
1854	443	7	0	1889
1855	402	5	3	to May 1	39	7	
1856	440	8	4				

Incidentally, we find a very varying proportion between the number of cases of pneumonia and the total admissions as shown by Chart I.

CHART I.



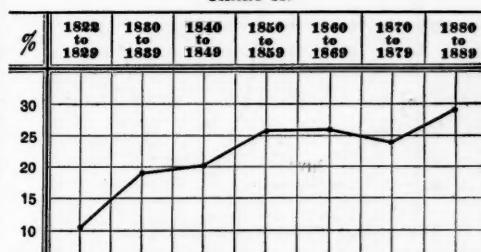
Percentage of cases of pneumonia to total medical cases, in decades.

It will be seen that in the last decade a proportionately larger number of cases of pneumonia have been admitted. It is hardly fair to conclude from this, however, that pneumonia has become more prevalent, as we must remember that with the modern ambulance system many very sick patients are taken to the hospital, while in former years the absence of this system would prevent many who

were taken sick with this disease of sudden onset from receiving hospital care. In the 1830 decade, however, nearly as large a percentage of pneumonia cases were admitted to the hospital, while the lowest percentage occurred in the '40's.

A glance at the table giving the cases and mortality in each year shows great variations; in some years no deaths having occurred from pneumonia, in other years a large proportion were fatal. Arranged in decades and represented graphically we obtain the following chart:

CHART II.



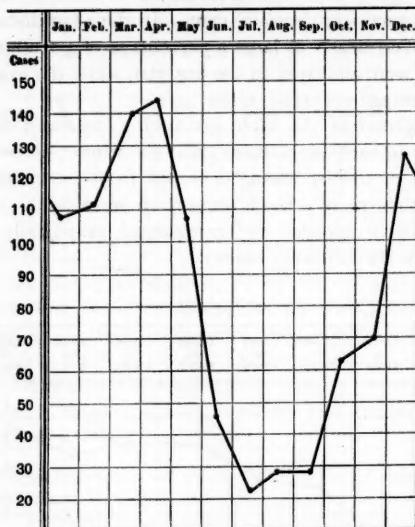
Percentage of deaths from pneumonia to all cases of pneumonia, in decades.

This shows an almost unbroken rise in the mortality from ten per cent. in the 1820 decade to twenty-eight per cent. in the present decade. From this we might infer that pneumonia is much more fatal now than it was fifty years ago, and much more fatal fifty years ago than it was seventy years ago, and that its fatality is steadily increasing—a conclusion well calculated to alarm and depress us.

As we have urged in the introductory part of this paper, conclusions like this should not be drawn until we have examined each individual case, else we may be entirely misled. We all know that the treatment of pneumonia, as of other diseases, has radically changed during the period of years we are considering, but before appealing to this factor as a cause of the change in mortality, let us examine the other factors, which perhaps may partly or entirely be the cause.

We have noted in each case the age, sex, race, previous condition, whether healthy or delicate, whether temperate or intemperate in the use of alcohol, and also the presence or absence of complications. All these are factors of more or less importance in their relation to the mortality. We have also noted the month of the year and the site of the lesion of the lung, together with the duration of the fever, till death or recovery, and the length of stay in the hospital. The month of the year and the site of the lung lesion, although having but little bearing on the present discussion, are of interest for statistical purposes, and are, therefore, recorded here in the following table and chart:

CHART III.



Total number of cases of pneumonia in each month.

A comparison of this chart with one prepared by one of the writers¹ from an analysis of 412 cases occurring at the Massachusetts General Hospital between 1870 and 1885, shows a great similarity. We calculated the per cent. fatal in each month, but from the irregularity of the results concluded that they were of no significance.

TABLE SHOWING PORTIONS OF LUNG INVOLVED IN ORDER OF FREQUENCY.

Seat of lesion	Total.	Died.	Per cent. fatal.
Lower right lobe	337	47	14
Lower left lobe	216	28	13
Both lungs	111	63	57
Upper right lobe	105	25	24
Whole right lung	74	39	53
Whole left lung	39	26	67
Upper left lobe	31	7	23
Middle right lobe	19	4	22

We determined the day of death in all the fatal cases, where this was possible, and found, as shown by the following table, that the eighth day was the one on which most deaths occurred.

TABLE OF DAY OF DEATH.

3d day	.	7 cases, or 3 per cent.
4th "	.	7 " 3 "
5th "	.	19 " 7 "
6th "	.	14 " 6 "
7th "	.	19 " 8 "
8th "	.	31 " 13 "
9th "	.	26 " 11 "
10th "	.	22 " 9 "
11th "	.	17 " 7 "
12th "	.	10 " 4 "
13th "	.	7 " 3 "
14th "	.	9 " 4 "
3d. week	.	23 " 9 "
4th "	.	7 " 3 "
5th "	.	5 " 2 "

¹ C. W. Townsend: An analysis of 412 cases of lobar pneumonia, etc. Boston Med. and Surg. Journal, March 25, 1886.

The duration of the fever could not, before the days of the thermometer, be determined with accuracy, but the following table gives this as nearly as possible.

TABLE OF DURATION OF FEVER.

4 days in	15 cases, or 2.3 per cent.
5 "	.	.	.	35 "	5.3 "
6 "	.	.	.	55 "	8.4 "
7 "	.	.	.	116 "	17.7 "
8 "	.	.	.	119 "	18.2 "
9 "	.	.	.	88 "	13.4 "
10 "	.	.	.	79 "	12.0 "
11 "	.	.	.	46 "	7.0 "
12 "	.	.	.	29 "	4.4 "
13 "	.	.	.	19 "	2.9 "
14 "	.	.	.	26 "	3.9 "
15 "	.	.	.	12 "	1.9 "
16 "	.	.	.	5 "	0.7 "
17 "	.	.	.	5 "	"
18 "	.	.	.	2 "	"
19 "	.	.	.	2 "	"
20 "	.	.	.	3 "	"
21 "	.	.	.	4 "	"
Over 3 weeks in	.	.	.	12	"

Of 212 occurring between 1870 and 1885, 128 cases ended by crisis and 84 by lysis.

Of the two sexes, there were 724 males and 276 females, of which 182, or 25 + per cent. of the former, while 68, or 25 — per cent. of the latter were fatal. The great preponderance of males, about four times as many, is due to the fact that in early years there were, we believe, larger accommodations for male than female patients, and, as a rule, men with acute diseases are perhaps more likely to be taken to a hospital than women. The British collective statistics from private practice show, however, a similar but not as great disproportion between the two sexes; they record about twice as many males as females. As the mortality in the two sexes was in our cases the same, although usually stated to be higher in females, the factor of sex is excluded in our search for the cause of the increase in the fatality of the disease.

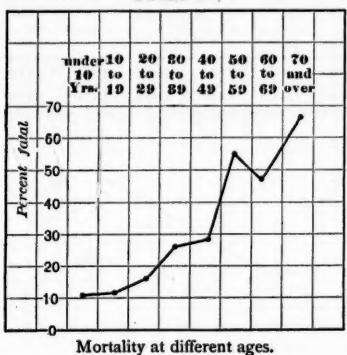
The factor of age is, however, one of great importance, as shown by the following table, and graphically by Chart IV.

Age of patient.	Total cases.	Fatal.	Per cent. fatal.
Under 10 years.	10	1	10.0
10 to 19 "	113	12	10.6
20 "	373	69	18.5
30 "	217	55	25.3
40 "	136	40	29.2
50 "	80	44	55.0
60 "	32	15	46.9
Over 70 "	12	8	66.7

It will be seen that up to the age of 49 years the mortality gradually increases from 10 per cent. to 29 per cent. After this age it makes a sudden jump of over 20, and rapidly rises above 50 per cent. As only ten cases occurred under 10 years of age, it is hardly fair to lay much value on this mortality rate of 10 per cent., which is probably too high. The

only fatal case in this class was a child $2\frac{1}{2}$ years old, emaciated and enfeebled from previous neglect and bad treatment.

CHART IV.

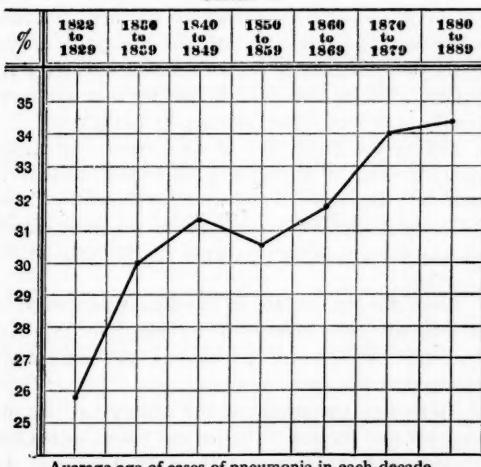


Mortality at different ages.

The break in the rising line of mortality in those between 60 and 69 years of age may be explained by the fact that 60 per cent. of these patients happened to be neither complicated nor intemperate, while of those between 50 and 59 years of age only 55.5 per cent. were free from complication or intemperance. A similar chart in the analysis of 412 cases previously referred to, corresponds almost exactly with Chart IV, but the fall at 60 years does not occur.

Now, an examination of the hospital records shows not only a proportionately greater number of patients over 50 years of age in the latter decades, but the average age, as will be seen by Chart V., has steadily increased from $25\frac{1}{2}$ years in the '20 decade to $34\frac{1}{2}$ years in the '80 decade.

CHART V.



Average age of cases of pneumonia in each decade.

Here, then, is one cause at least for the higher death-rate in later years, and one which is, of course, entirely independent of treatment.

A complete record of the condition of the patient previous to the attack of pneumonia would be of great value, but, unfortunately, was not kept in many of the cases. 445 of the patients were stated to have been healthy; of these, 62 died, or 14 per cent., a percentage considerably under the average. 67 were stated to have been delicate, no especial disease existing; of these, 26 died, or 39 per cent. 161 had acute or chronic complications, and of these, 59 died, or 37 per cent. The complications, with the number of deaths in each, are given in the following table:

TABLE OF DISEASES COMPLICATING PNEUMONIA.

Disease.	Total cases.	Number fatal.
Asthma	6	4
Bleeder	1	0
Bronchitis, chronic	11	5
Cardiac disease	18	5
Delirium tremens	23	15
Diabetes	1	0
Diarrhoea (severe)	6	3
Embolism, cerebral	1	1
Embolism, pulmonary	1	1
Emphysema	2	1
Empyema	6	3
Erysipelas, facial	1	0
Gangrene of lung	3	3
Gastro-duodenal catarrh	1	0
Hiccup (persistent)	1	1
Hemiplegia	1	1
Hemiplegia following pneumonia	1	0
Idiocy	2	2
Intermittent fever	13	3
Lateral curvature	1	1
Measles	2	1
Meningitis	1	1
Nephritis	9	4
Pericarditis	3	2
Peritonitis	2	1
Perityphlitis	1	1
Phthisis	22	7
Pleurisy with effusion	17	4
Pott's disease	1	1
Pregnancy with miscarriage	2	2
Pregnancy without miscarriage	2	0
Rheumatism, acute	8	1
Surgical injury	1	1
Typhoid fever	22	10
Total complications	193	85
Counted twice	32	26
Total patients with complications .	161	59

55 were recorded as temperate in the use of alcohol, of whom 8 died, or 15 per cent., while 109 were intemperate, and 45 died, or a mortality of 41 per cent.

The influence which the presence or absence of complications, of good health and of temperance have on the mortality of acute pneumonia is a fact well recognized, and is duly emphasized by the above analysis. We must next find whether complications and intemperance are more or less prevalent among pneumonia patients at the hospital now than they were in former times.

An objection will undoubtedly be raised here that in former days complications were not so readily recognized as at present, and that particularly in post-mortem examinations the pathologist almost always finds some abnormal conditions which were passed over in silence because not recognized in the older records. Therefore, we should expect to find complications more prevalent in later years. As we felt the danger of this, we think we have avoided it by recording only those cases as complicated where the diagnosis was plain, and where the lesion, if observed post-mortem, was a gross one, and one that was as easily recognized by early as by late reporters. We think all will admit this on examining the list of complications. The complication emphysema, it seemed to us, might be rather too fine a diagnosis for our list, but of the two cases one occurred in the '30 decade and one in the '80 decade, so this certainly ought to remain. Pericarditis, another example, occurred once in the '30, once in the '60, and again in the '80 decade.

Diarrhoea is entered in our list, but only the very severe and generally chronic cases are there mentioned, for a slight or moderate diarrhoea is, as is well known, a not infrequent symptom in pneumonia.

Many of the complications, as will be seen, are chronic, antedating the attack of pneumonia, while the rest, with but few exceptions, although acute, are entirely accidental and independent of the pneumonia. The exceptions, gangrene of the lung, empyema, and in some cases pleural effusion, being a part, as it were, of the pneumonia, should perhaps have been excluded, as it may be said that their occurrence may have been due to the treatment; but these cases are so few in comparison with the others, and are so evenly distributed through the decades, that they will not influence the results.

The following table shows the number of cases that were complicated or simply delicate, and the number intemperate in each decade.

	1820	1830	1840	1850	1860	1870	1880
to	10	10	10	10	10	10	10
1820.	1830.	1840.	1850.	1860.	1870.	1880.	
Complicated } or delicate,	6	11	6	15	39	37	114
Intemperate,	0	2	2	8	18	12	66

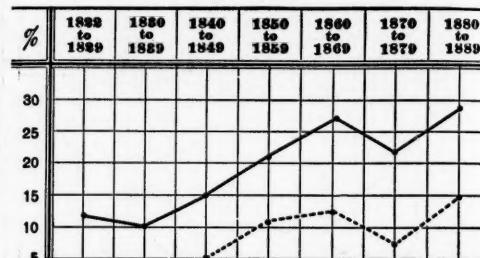
Calculating the percentage of these cases to the total number of cases of pneumonia, we find that this percentage, both of the complicated and delicate and of the intemperate, has been increasing, as shown by Chart VI.

The only remaining factor is that of race, and our 1000 cases are divided as follows:

	Total cases.	Fatal.	Per cent. fatal.
American (including Canadians)	463	103	22
Irish	371	94	25
Other foreigners	119	36	30
Not recorded	47	17	36
Total	1000	250 Aver. 25	

This table shows the least fatality among the Americans, a greater fatality among the Irish, and a still greater one among other nations; but we have no right to infer that the race factor itself is the

CHART VI.



Ratio of the complicated and delicate cases to total number of cases of pneumonia, represented thus.— Ratio of intemperate cases to total number, thus.

cause of this difference. Patients of foreign birth who are taken to the hospital are perhaps of greater age, or more liable to have complications or to be intemperate than those of American birth, and these factors may account for the difference in mortality. It occurred to us, therefore, that it would be interesting to see what the percentage of mortality would be in the different races, omitting all those fatal ones who were over fifty years of age who were intemperate, delicate, or complicated, factors which we have shown are sufficient cause for a large mortality. The results obtained are as follows: Americans, 9 per cent. fatal; Irish, 11 per cent. fatal; other foreigners, 14 per cent. fatal. Comparing these percentages with the former ones, we find that the proportionate mortality of the different races remains almost as before, with the exception that Americans are even more favored than by the first analysis, while among foreigners, with the exception of the Irish, the mortality is proportionately greater than before. The reason of this may be that our most poorly nourished classes are largely foreigners.

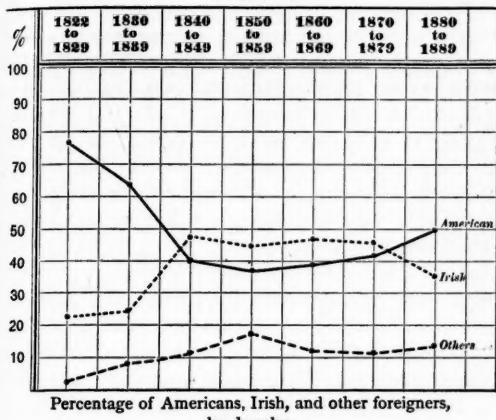
During the early part of the century American patients were, of course, more abundant, relatively, than they are now; a fact which is shown by Chart VII., which gives the percentages of the three classes among the pneumonia patients in the hospital by decades.

From the descriptions of the disease contained in the records there seems to be no reason for thinking that the character of pneumonia has susceptibility changed in this series of years.

To sum up the results of the analysis, so far, we may say that the sex of the patient has in these cases no influence on the mortality; that the age of the patient is of great significance—the older the patient the greater the mortality; and that over the age of fifty years more than fifty per cent. die; that intemperate patients are far more apt to die than tem-

perate patients; and that the mortality in the patients who are delicate or who have some complication is much higher than in the healthy and non-compli-

CHART VII.



cated; and, finally, that the proportion of deaths among Americans is less than among Irish, and in these latter less than among other foreign nations, and that this difference is not dependent as far as our studies show, on the existence of more frequent complications or intemperance among foreigners.

We have also seen that the average age of the pneumonia patients has been steadily increasing from the earliest decades of the hospital to the present day; that the relative number of intemperate and of delicate patients has increased, and also of cases complicated by other diseases, and, finally, we have seen that the proportion of foreign-born patients has also increased.

Let us see how much influence each of these factors has had in increasing the mortality from pneumonia in the hospital, and whether it is possible that all of them together may not be the whole cause, and that it will not be necessary, as might have been our first impulse, to appeal to the change of treatment as the cause of this increase in the mortality.

In order to learn the answer to these questions we have prepared the following charts which we think explain themselves:

CHART VIII.

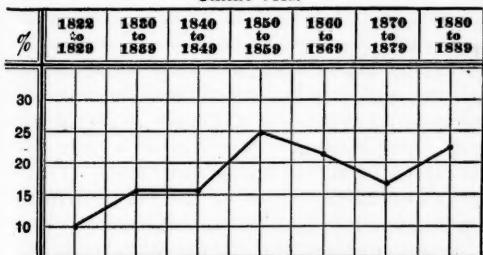
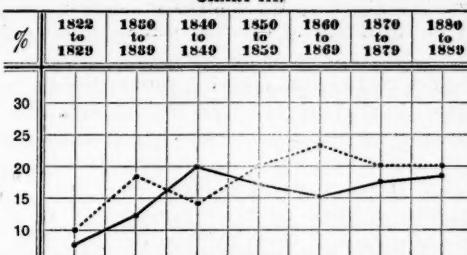


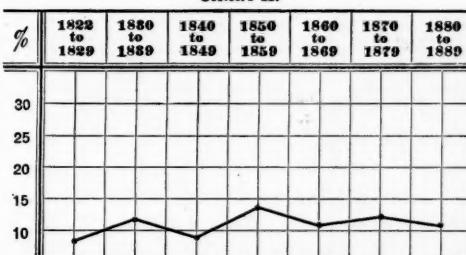
CHART IX.



Mortality, omitting the delicate and complicated who died, represented thus —

Mortality omitting the intemperate who died thus

CHART X.



Mortality by decades, omitting all fatal ones who were over fifty years of age, or were delicate, complicated, or intemperate.

This last chart represents, then, the mortality in the hospital by decades, excluding all cases whose death can reasonably be accounted for, that is to say, all who died who were over fifty years of age, were intemperate, delicate, or who had complications. As will be seen, instead of showing as in Chart II., a regular and decided increase in the mortality from the earlier part of the century to the present day, it shows but little variation from decade to decade, and we certainly could not infer from this chart that the mortality from pneumonia had on the whole changed in the last sixty-eight years.¹

We must conclude, therefore, that, as shown by this analysis, the mortality of acute lobar pneumonia at the Massachusetts General Hospital has remained practically the same from 1822 to 1889, notwithstanding the great changes in treatment, and that the disease is the same now as it was sixty-eight years ago. This result, although not very encouraging, is certainly far better than was the hasty conclusion drawn from the mortality table alone before analyzing the cases.

But are we to infer that treatment is of no avail? Has it not had any influence on the duration of the disease or of the convalescence, and how has the general condition of the patient in these two stages

¹ It is probable if we had taken into consideration the increase in foreigners and the decrease in Americans of late years, that Chart X. would have been more nearly a horizontal line than it is now.

been influenced by the treatment? A short *r  sum  * of the treatment at different periods is necessary before we can answer these questions.

Prior to the year 1850 the treatment was truly heroic; almost every case was vomited and purged, given mercury to salivation and sore gums, blistered with cantharides, and bled. Of the 187 cases before 1850, 115 or nearly two-thirds were bled. The quantity of blood taken was often large. In 1833 one case was bled three times to the total amount of fifty ounces, and forty-eight leeches in all were applied during his illness. Another case was bled during his illness sixty ounces, or nearly two quarts. Local wet-cupping and leeching at the same time with venesection were also used.

The diet in this period was a low one, as can be seen by the following examples taken from the records: "May have juice of quarter of an orange at a time." "May have a teacup of milk three times daily with cracker." "May have broth not exceeding four ounces and repeat in four hours if he wants it." This low diet was also continued into the convalescence. Thus, in 1849, a patient on the fifth day of the convalescence was allowed "Broth six ounces at noon."

In the '40's mercury and emetics were less frequently used, but the patient was still given tartarate of antimony and kept on the verge of vomiting. Blisters at this time were also gradually omitted and replaced by sinapsisms.

Cantharides, besides producing much local effect, was a frequent cause of strangury, so that catheterization had to be resorted to. The sores made by the blister were irritated by various drugs in order to obtain a more intense effect, so that gangrenous sloughs and ulcers slow in healing were not infrequent results. During the convalescence such records as these were not uncommon: "Complains of nothing but ulcer left from blistering." "The black slough from the blister beginning to separate."

Cathartics were given freely, not only in the hospital but before their arrival there. One case, a man of twenty-three years, was said to have had fifty dejections on the third day of the disease after taking cathartics at his home, and it seems as if the fatal result might be attributed to this.

Before 1850, opium was scarcely ever used, and in no case was the treatment an expectant one. The occasional use of colchicum and other drugs was noticed. Stimulants during the period before 1850 were almost never given, and then only in minute quantities, generally just before death. For example, one of the earliest mentions of its use is in 1839, when the following record occurs: "May have a tablespoonful of cider." In another case: "Wine whey if skin becomes cold;" this was given a few hours before the patient's death. As another example, may be mentioned a patient forty-four years

of age with a complicating pericarditis and the history of a cough for ten years, who was kept on a low diet, was bled, vomited, purged, and blistered, and was not given any alcohol. The patient died.

From 1850 to 1860 seems to have been a transitional period in the hospital treatment of this disease, and for the first time we meet with cases which were treated practically in an expectant manner, 11 out of 72 cases being so treated in this decade. Opium in occasional moderate doses, generally in the form of Dover's powder, was then used for nearly the first time; syrup of Tolu and "fever mixtures" containing nitre were also given, and an occasional administration of quinine and veratrum viride was also noticed. Less than one-third (19 cases) were bled, and the other heroic measures were proportionately decreased. Alcohol was used more frequently just before death, but the fear of giving it while there was fever is evident from such a record as this in 1858: "May have cider 3vj or 3vij in the twenty-four hours if no more fever."

Soon after 1860, the records show that pneumonia patients were being systematically fed with milk and broths. Heroic treatment became a thing of the past, emetics, cathartics, mercury, and blisters being discarded, and there are records of but six cases of venesection after the year 1860, and leeches were used in only a very few. Alcohol was given systematically from this time. Of 741 cases treated since 1860 there is record of the use of alcohol in 353 cases. A comparison of the mortality of those to whom stimulants were given and those treated without them would be useless, for the more severe and feeble cases were given alcohol, and nearly all received it before death.

The treatment by drugs was slight after 1860. In the 60's and early in the 70's wine of ipecacuanha in small doses was largely used. After 1875 carbonate of ammonium was the drug most frequently prescribed. Opium was given in many of the cases, generally in moderation, to relieve pain. Digitalis was also used to some extent. There are but very few records of quinine in the large doses sometimes used in New York and elsewhere. In the last few years antipyrin and acetanilid have been used in a few cases, but we may say that, as a rule, since 1860 the treatment of pneumonia at the hospital has been largely sustaining and expectant.

A glance at Chart XI., which is the same as Chart II., but shaded to indicate the periods of different treatment, shows that the entire rise in the mortality took place during the period prior to 1860, when the treatment was entirely or partly heroic.

This fact alone, even if we had not demonstrated the same truth by another method, shows the entire lack of connection between the mortality rate and the method of treatment.

Is it possible that the heroic treatment contained

both bad and good elements, which by counteracting each other, gave, as we have seen, exactly the same results as by the expectant method; and, therefore, if the bad elements were eliminated we

far more agreeable to the patient than the former heroic method.

After these studies we cannot but admire the regular and uniform manner in which pneumonia—that type of self-limited diseases—has run its course in all these years uninfluenced by the varying treatment it has received.

SUMMARY.

1. In the 1000 cases of acute lobar pneumonia treated at the Massachusetts General Hospital from 1822 to 1889, there was a mortality of 25 per cent.

2. The mortality has gradually increased from 10 per cent. in the first decade to 28 per cent. in the present decade.

3. This increase is deceptive for the following reasons, all of which were shown to be a cause of a large mortality:

- (a) The average age of the patients has been increasing from the first to the last decade.

- (b) The relative number of complicated and delicate cases has increased.

- (c) The relative number of intemperate cases has increased.

- (d) The relative number of foreigners has increased.

4. These causes are sufficient to explain the entire rise in the mortality.

5. Treatment, which was heroic before 1850, transitional between 1850 and 1860, and expectant and sustaining since 1860, has not, therefore, influenced the mortality rate.

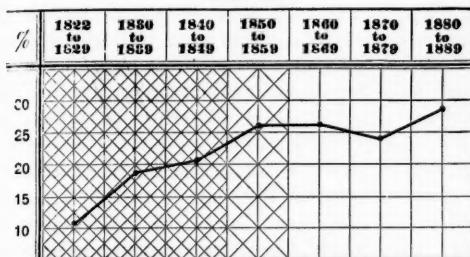
6. Treatment has not influenced the duration of the disease or of its convalescence.

ON SOME MODIFICATIONS IN THE TECHNIQUE OF ABDOMINAL SURGERY, LIMITING THE USE OF THE LIGATURE EN MASSE.¹

BY LEWIS A. STIMSON, M.D.,
OF NEW YORK.

THE period during which the important and brilliant operations, now so frequently and successfully performed within the abdominal cavity, have been practised is relatively very brief, and although the accumulated, and, in many instances, the individual experience is large, the work has, in the main, been done along lines and according to methods and principles which, it may be assumed, have yet to undergo modifications that will be slowly evolved from the thoughts and experience of successive generations of surgeons. In this respect abdominal surgery differs widely from the other branches of the art: it can profit, not by the experience of centuries within its own field, but by that of only a few decades of years; and as, in addition, the material conditions of this field present wide variations from those of the regions upon which the skill and thought

CHART XI.



Same as Chart II., also showing periods of treatment. Before 1850 heroic; between 1850 and 1860 transitional; after 1860 expectant.

should have better results than by the expectant method? In the light of our present knowledge of the bacterial nature of the disease, is it possible that the germicidal mercurial treatment constituted the good element?

After this digression let us now answer the questions as to the duration of the disease and of its convalescence as affected by treatment. We obtained the average duration of the fever and found it to vary in each decade but a small fraction from nine days. The duration of the convalescence also, as shown by the length of stay in the hospital, has not changed, for in each decade the average stay of each patient varied but very little from three weeks and four days.¹

One more point is of interest. Did the aged and delicate, the complicated and the intemperate have as good a chance for recovery under the old heroic treatment as with the later sustaining one?

Counting all the cases of these classes together, which means that many are counted twice, we find before the year 1860, or during the heroic period, 62 cases among these classes, with 25 deaths, and after 1860 397 cases, with 165 deaths. Reduced to percentage, we find the mortality to be almost exactly the same, namely, 40 per cent. in the first period and 41 per cent. in the second period.

We must, however, admit that the present treatment of expectancy, a treatment which makes the patient as comfortable as possible, preserves his strength and avoids everything harsh, is certainly

¹ The table shows the average duration of fever and stay in the hospital in each decade.

	1822 to 1829	1830 to 1839	1840 to 1849	1850 to 1859	1860 to 1869	1870 to 1879	1880 to 1889
Fever (days)	10.5	8.7	9.1	9.1	8.9	9.5	9.2
Stay in hospital (weeks)	3.6	3.5	3.8	3.7	4.2	3.4	3.6

¹ Read before the American Surgical Association, 1889.

of surgeons have heretofore been concentrated, it is not singular that corresponding differences should appear in its operative principles and methods. Of these differences the most striking is in the measures taken to prevent or arrest hemorrhage, which consist, as a rule, of *ligatures en masse*, ligatures of heavy silk, each embracing a large mass of tissue, and thus creating one or more "stumps" from which the blood-supply has been cut off, and which, subsequently, are either fixed in the external wound to be slowly cast off, or are left in the abdominal cavity to undergo molecular disintegration and absorption.

The advantages which, in theory at least, belong to this method are celerity of performance and freedom from hemorrhage, and it is not to be denied that in many cases, and especially in those which were the first undertaken in this branch, and success in which led to the great extension that has followed—the removal of narrow pedunculated cysts of the ovary—these advantages do exist. By no other method of treatment, probably, could the cyst be removed through so small an incision, so rapidly and so safely, and it is not strange that its admirable adaptability to these cases should have led to its habitual use in others, and that the attention and ingenuity of operators should have been directed by its defects to its improvement and modification rather to the substitution of a radically different method.

The principal objections to the *ligature en masse* are two in number: (1) It is not always an efficient protection against hemorrhage, and (2) the mass of tissue embraced by it and forming the stump is sometimes so large or so related that it cannot safely be returned within the cavity and treated intra-peritoneally, but must be fixed in the parietal wound to be cast off as a slough, and thus to necessitate healing by granulation, with its delay and risks. The size of the stump is not the only reason for treating it extra-peritoneally; another and equally strong one arises from the fear of hemorrhage or from the nature of the means used to prevent it, such as the elastic ligature, the clamp, or the écraseur, which cannot be left within the peritoneal cavity. The danger of hemorrhage from a stump that is long enough to be treated extra-peritoneally is not great, for the protective means at our disposal are efficient, and, if bleeding should occur, it can be promptly detected and readily controlled. But it is vastly different with ligatures that are left within the cavity, ligatures of silk or catgut embracing, usually, a broad layer of parietal peritoneum that has been drawn in from all sides toward the ligature and is retained by it under considerable tension. Within this puckered fold of peritoneum lie the vessels and the tissue in which they are imbedded, all tense because they have been lifted up and drawn upon in the applica-

tion of the ligature, and all constantly solicited by this tension to slip out of the loop. Each slight yielding to this traction makes the next one easier, for it diminishes the amount of tissue embraced within the loop, and thus diminishes also the friction by which the rest is retained. Hemorrhage from such a ligature is not uncommon, and has been fatal, and the post-mortem examination plainly shows the mechanism by which it has been made possible; there is the large circular gap in the peritoneum, the wide extravasation in the subperitoneal connective tissue, and far up within it the divided vessel, all indicating by their separation the traction necessary to bring them within the loop of a single ligature. The fault is not in the tying of the ligature; it has not become untied, but it has failed to hold, just as it would have failed if it had been placed upon a smooth, hard cone. The ligature has not simply to compress the vessels contained within it, but it has also to oppose a constantly exerted evertting strain, acting toward all sides, widening its loop, and favoring the escape of the central vessels by loosening the friction upon them, and in this contest it has too often proved the weaker.

The consideration that appears to have had most to do with the general use of this dangerous form of ligature is the supposed necessity of tying all divided tissues in order that all hemorrhage may be prevented, not only that from the larger vessels, but also that from the minute vessels of the peritoneum and connective tissue. But this necessity, I think, does not exist, and this mode of ligature should be abandoned, except in certain special cases, for that which is the rule in operations upon other parts of the body, the ligature of the arteries alone with the smallest possible amount of additional tissue, and every effort should be made to exclude the peritoneum itself from the grasp of the ligature. Ordinarily, this is not difficult to accomplish. Take, for example, the outer portion of the broad ligament, where its peritoneal layers are reflected forward, backward, and outward, over the pelvis, and where the bundle of ovarian vessels lies. Draw it well up by lifting the ovary, place a rather long-bladed pair of self-holding forceps transversely upon it close to its base, divide the ligament a half inch on the distal side of the forceps along the full length of its blades; the divided vessels will be plainly seen on the cut surface, where they can be readily grasped with an artery-clamp, the peritoneum stripped back, and a ligature applied. Then, on removal of the first pair of forceps, the peritoneum retracts to its original position, the vessels lie free in their bed of connective tissue, and the ligature is subjected to no other strain than if it had been placed upon an artery in continuity; traction upon the parietal peritoneum by any shifting of the viscera or change in the attitude of the patient leaves it unaffected thereby.

This can be done wherever a clamp can be placed between the abdominal wall and the part that is to be removed, and the cases in which *ligature en masse* will be preferable appear to me to be only those in which the abdominal incision is so small or the anterior wall so thick and so slightly compressible that a clamp cannot be securely applied and the cut surface readily inspected and handled. The cut edges of the peritoneum can afterward be brought together with a continuous suture, if it is thought best to close this gap. The principle which, in my judgment, should govern the method of securing vessels divided in the removal of a viscous or a tumor from the abdominal parietes may be formulated as follows: The ligature should be applied to the vessels alone, underneath the peritoneum, and should under no circumstances include a circular layer or sleeve of parietal peritoneum that has been forcibly drawn up to form a pedicle, and will have to be held by the ligature against a diverging lateral strain.

A special and very valuable application of the substitution of isolated ligature of the vessels for the *ligature en masse* is the preliminary ligature of the uterine arteries in continuity, in supra-cervical or total abdominal hysterectomy. I have employed it with complete success in five cases, the first two of which were reported to the New York Surgical Society, January 9, 1889, and published in the *New York Medical Journal*, March 9, 1889. Each artery is sought for at the side of the upper part of the cervix by palpation of the broad ligament between the finger and thumb; after its position has been thus ascertained, a small incision is made through the peritoneum along its course on the front or, preferably, the back of the broad ligament, the artery separated from the veins with a director, and a ligature passed by means of an aneurism needle. The ureter lies to the outer side and is easily avoided. When both uterine arteries have been thus tied, and the ovarian vessels secured, as above described, by clamps, both ovaries and tubes and the body of the uterus can be removed by a transverse incision just above the clamps and ligatures, and the cut surface will be almost absolutely bloodless. The cervix can then be removed by cutting through between it and the bladder into the vagina and then cutting around it with scissors, or, of course, the cervix can be removed without previously cutting away the body of the uterus by cutting through each broad ligament to the side of the uterus, carrying the incisions through the peritoneum on the front and back of the uterus, and then working down through these latter incisions to the vagina as in the other case. The hemorrhage from this part of the operation is trifling, and as the cut surface is freely exposed to view, any vessel that may require it can be readily caught and tied. The following record of a hitherto

unpublished case (my fourth) may serve to show the details.

F. W., forty-eight years old, colored, unmarried, had suffered for a number of years from abdominal pain and discomfort, and profuse hemorrhages from the womb attributed to a slowly increasing abdominal tumor situated in the hypogastrium. When I first saw her, in March, 1889, she was greatly reduced in strength and had been confined to bed for several weeks. Examination showed a solid, irregular, movable tumor filling the space between the umbilicus and pubes, and extending a hand's breadth to either side of the median line. The cervix could not be reached *per vaginam*, and the upper wall of the vagina was somewhat depressed by a firm, rounded mass, movable and apparently continuous with that lying above the pubes. The diagnosis of multiple uterine fibroids was made, and an operation for their removal was proposed and accepted. I sent the patient to the New York Hospital, and operated there March 26, 1889.

The peritoneal cavity was opened by an incision extending from a little above the pubes to the umbilicus, and through this the tumor and both ovaries were with some little difficulty turned out. By division of some broad adhesions between the rectum and the back of the uterus, Douglas's pouch and the posterior surface of the broad ligaments were freely exposed to sight and touch. The two layers of each broad ligament were found to be widely separated from each other near the uterus by the development of a fibroid low down upon the back of this organ, and each uterine artery could be felt lying much nearer the anterior than the posterior layer. The left one was first sought for through an incision in the posterior layer low down in the pelvis close beside the above-mentioned fibroid; it was found at the depth of about an inch, raised upon an aneurism needle for inspection and identification, and tied with catgut. The search for the right uterine artery was more difficult, because of its even greater distance from the posterior layer, but it was ultimately secured and tied, although not so cleanly isolated as the other had been. Up to this time twenty-five minutes had been consumed in the operation, fully ten more than in any of the preceding operations, the delay being due partly to the difficulties created by the depth at which the arteries were placed, and partly to an intercurrent exploration made to ascertain if they could be exposed and recognized with certainty close to their origin upon the anterior branch of the internal iliac artery.

The outer portion of each broad ligament was then clamped with haemostatic forceps well below the ovary, each ligament completely divided with the knife above the clamp, the cuts united by incisions through the peritoneum covering the front and back of the uterus, and through these incisions the uterus was peeled away from the peritoneum well down to the cervix, and then its body cut away by a transverse cut. There was no bleeding from the cut surface.

The stump of the uterus was seized with Volsella forceps and drawn upward and backward, the cut

edge of the peritoneum adjoining the bladder drawn forward, and the anterior surface of the cervix rapidly dissected out until the vagina was opened into, the dissection being guided by the left forefinger introduced through the vulva into the vagina. After the opening had been made the finger was withdrawn and reintroduced into the vagina through the opening to serve as a guide in the division of the remaining attachments of the cervix; this was quickly and easily made with scissors, taking care to cut on the sides between the ligated uterine arteries and the cervix. There was no hemorrhage requiring attention, except from two small vessels divided in the dissection of the anterior surface of the cervix.

Turning then to the cut surfaces of each broad ligament at its outer part, where held by the clamp, the bunch of divided vessels was caught with another clamp, drawn out of its peritoneal sheath, and tied with catgut. The removal had thus been made and all bleeding arrested or prevented by six catgut ligatures, two on the uterine arteries, two on the bunches of ovarian vessels, and two on small bleeding points between the bladder and vagina.

The remaining details may be briefly given. The peritoneal flaps raised from the front and back of the uterus were turned down toward the vagina so that their serous surfaces were opposed to each other, and the sides of the peritoneal gap left by division of each broad ligament were brought together by a continuous catgut suture; a rubber drainage tube was placed in the vagina so that its inner end projected about two inches into the peritoneal cavity, and the anterior incision was closed. The vagina was loosely packed with iodoform gauze. The drainage tube was removed after forty-eight hours; loose packing was kept in the vagina for a week, and this passage was occasionally cleaned with a douche. The patient made a good recovery.

The capital point to be attended to is that the uterine arteries should be tied sufficiently low down in the pelvis, before branches of any considerable size are given off, for otherwise time will be lost in securing these branches when they are subsequently divided. In case of accident, such as the slipping of the knot of the ligature, or the wounding of the artery or of a branch by the aneurism needle, or of hemorrhage from an unsecured branch, the bleeding can be easily arrested by pressure with the finger upon the corresponding internal iliac artery or its anterior branch, and an opportunity thus afforded leisurely to repair the damage or secure the wounded vessel.

The advantages of the method are apparent: rapidity and ease of execution, absolute and permanent security against hemorrhage, relief from the necessity of creating strangulated stumps with the concomitant risks of setting up suppurative or septic processes, and immediate closure of the abdominal wound. In cases in which it may be deemed desirable to retain the cervix, it can be entirely shut off

from the peritoneal cavity by drawing the peritoneum together over it, and its raw surface and that of the subperitoneal space can be drained by a tube placed in the cervical canal and brought out through the vagina. If the operation is undertaken for procidentia, the cervix may be retained and fixed in the lower angle of the abdominal wound, as in one of my fibroid cases, or it may be removed and the upper cut edges of the vagina fixed in the same place, as was recently done with success by my friend and colleague Dr. William M. Polk.

Whether or not the isolated ligature of vessels upon the cut surfaces of the base of implantation of broadly pedunculated tumors of the ovary and of those formed by distention of the tubes can be advantageously substituted for the *ligature en masse* I have not yet had an opportunity to determine by trial, but I believe that it can be. Certainly the ovarian artery can be thus secured, and it does not seem probable that the branches coming from the side of the uterus will prove too large or too numerous thus to be safely and promptly secured. It is within the experience of all that a heavy silk ligature drawn with all the force that it will bear about such a pedicle does not always prevent bleeding, but that separate ligatures need in addition to be placed upon one or two spirting vessels. The trial can be easily made, and, I believe, without serious risk.

A CASE OF TUBAL PREGNANCY TERMINATING SPONTANEOUSLY PER VAGINAM.

BY P. C. WILLIAMS, M.D.,
OF BALTIMORE.

JANUARY 29, 1889, I was called to see Mrs. B., whom I had attended in 1888 for a severe vaginismus, which was greatly relieved when I left Baltimore in September, 1888. I found Mrs. B. much improved in appearance since I had seen her in September. She had gained much in strength, had an excellent color, and was able to exercise with more comfort than she had done for many months. I was surprised when she told me that she thought she was pregnant, and she desired me to ascertain whether it was true.

Upon inquiry she informed me that she had menstruated freely about the middle of October—had not menstruated in November or December—but during that time had decided leucorrhœal discharge which was frequently colored either red or brown. At the time of my visit (Jan. 29th) her strength and appetite were good, her figure plump and full, and her color excellent. There was also increased fulness of the mammary glands—but there was no "morning sickness," no nausea at any time.

External examination revealed nothing special, except enlargement of abdomen and tenderness over the pubic region.

Examination with speculum revealed vagina and labia of natural color, the cervix uteri normal in size, but rather soft to the touch; the *os uteri patulous* and emitting a free mucous discharge. Under these circumstances I felt satisfied that she was not pregnant and so expressed myself to her.

She still insisted that she was pregnant, and wished me to explain her failure to menstruate during the past two months, and her increased fulness of abdomen and breasts. This I was unable to do.

During the month of February I kept her under observation. During that time there was a gradual and steady increase of more or less bloody mucus, accompanied with pain of considerable severity, which she always located "in the region of the bladder."

During the latter part of February I found increased fulness and hardness over the pubic region, extending toward the left side, and I then thought that I could detect the outline of a foetus. Further investigation proved this to be true.

After careful external examination I inserted two fingers of my left hand into the anterior "cul-de-sac," and then by steady pressure upon the abdomen with my right hand I could distinctly feel a tumor descend upon them, and I could readily produce abdominal ballottement. By cautious pressure with my hands—one in the vagina and the other on the abdomen—I could distinguish the outlines of the body and limbs of the foetus. Being thus satisfied that she was pregnant; and also feeling convinced that the foetus could not be *in utero*, I determined to settle that question. Accordingly I inserted a vaginal suppository about *two inches long*—which I had been using to allay the pain—into the cavity of the uterus. It entered the *os* with great facility, and this induced me to introduce my finger *in utero*; which proved beyond all doubt that the uterus contained no foetus. This convinced me that it was a case of *extra-uterine pregnancy*.

Furthermore, the constant increase of bloody discharge from the vagina led me to suppose that I had to deal with a case of *tubal pregnancy*—with the foetus just outside the *left horn* of the uterus. This bloody discharge continued with more or less abundance during the month of March, and about the 20th of the month the pain became more and more severe, and it required large doses of opium to restrain it within the limits of endurance.

At this juncture, viz., early in March, I communicated my opinion to Prof. Howard, and I told him that I would probably have to call upon him to relieve my patient by a laparotomy. Being anxious to save my patient the burden of thinking over the impending operation, I determined not to inform her family of her grave condition until circumstances would demand active intervention. Finding, however, that my reticence subjected me to very severe

criticism from her friends outside of her family, I concluded that I ought to explain the situation to her husband.

This I did fully on the evening of March 30th. Early the next morning, April 1st, her husband came for me, and said that his wife had suffered intensely all night, and that the anodynes could not control the pain. I went with him immediately, thinking that the time for the laparotomy had come.

When I reached the house I found her suffering great agony. I at once put her under chloroform, and proceeded to examine per vaginam. I introduced my finger *in utero* and to my great surprise and unutterable relief I discovered that the *fetus had descended into the uterus*, and that my patient *was in labor*. After three hours she expelled a foetus about *four months old*, which gave feeble evidences of life and then expired. The placenta was extracted by gentle traction upon the cord. This was followed by slight hemorrhage, which gradually diminished under the use of ergot until it assumed the quantity and quality of ordinary lochial discharge.

For some days there remained an area of induration, about half the size of my hand, in the left iliac region. This induration gradually decreased in area, until to-day (May 10th) there is a hardness resembling a tumor about the size of an English walnut, a little to the left of the median line, and about half-way between the umbilicus and the pubis. With this exception my patient has returned to her normal condition, and I hope will soon be able to resume her household duties.

Thus has terminated favorably a case unique in my experience; and one that caused me grave anxiety for many weeks.

MEDICAL PROGRESS.

A new Symptom of Pericarditis.—In some cases the diagnosis of effusion into the pericardium is difficult; and a symptom, first noted by Bamberger, is said to be constantly present, and to aid materially in arriving at a correct conclusion. Puis, in the *Wiener medicinische Wochenschrift* (quoted in the *British Med. Journ.*, July 6, 1889), early in this year, has again attracted attention to the point. By percussion of the patient in a sitting position, or when lying on the right side, there is a muffled tympanitic resonance or diminished resonance over the left side of the thorax behind, extending downward from the angle of the scapula; and at the place of greatest loss of resonance there is distinct bronchial breathing and bronchophony, with increased vocal fremitus. If the patient is made to bend forward, a portion of the dulness completely disappears, another portion becomes tympanitic, and no bronchial breathing is heard. This change is more marked still if the patient assumes the knee-elbow position. The physical signs observed are ascribed to compression of the lower lobe of the left lung by the fluid in the pericardium, and is found chiefly in young adults with chests which are elongated or nar-

rowed antero-posteriorly. The presence of pneumonia or pleuritis is contra-indicated by the alteration of the physical signs when the position of the patient is changed.

Salve for Pityriasis Versicolor.—The following salve, which is recommended by the *Deutsche medicinische Wochenschrift*, June 6, 1889, as an efficient remedy in cases of pityriasis versicolor, should be rubbed into the affected skin every evening and washed off with soap and water the following morning :

R.—Salicylic acid	3 parts.
Precipitated sulphur	10 "
Vaseline }	aa 50 "
Lanolin }	—M.

Cholecystotomy.—MR. LAWSON TAIT states that he has now performed fifty-four cholecystotomies, with two deaths, which were not in the least degree attributable to the operation, but simply to the progress of the disease; we may take it, therefore, that the true mortality of cholecystotomy is not more at present than four per cent. Of the cases operated upon so far there has been not a single case of recurrence of the disease, so that this argument which is put forward in favor of cholecystectomy has no foundation whatever. As a matter of fact, gall-stone is not a disease of the gall-bladder, for it is perfectly evident that the stones are not formed there, although it is true that there they grow; just as we know that in the great bulk of cases stone in the bladder is not a disease of the bladder originally, for the stones are in most instances formed in the kidney. Biliary fistula after cholecystotomy can only be permanent when the operation happens to have been performed at a time when a gall-stone was impacted in the common duct—at least that is his experience; and he can hardly imagine any other condition than obstruction of the common duct making this condition permanent. In three of his cases he crushed this obstructing gall-stone, and succeeded in getting a free road through the common duct. In one case he did not succeed; the patient, after living some years with a biliary fistula, died of phthisis, though he believed that the phthisis was a condition perfectly independent of the biliary fistula. On post-mortem examination there was found a series of gall-stones obstructing the common duct, only one of which he had succeeded in breaking up. It must be evident to the least skilled observer that in these cases removal of the gall-bladder would have been the most foolish of all possible proceedings, for the bile must have regurgitated immediately into the peritoneum. The cases in which the biliary fistula was alleged to remain permanently really constitute the strongest of all arguments against the operation of cholecystectomy, and of this operation he says that it is one which can be performed with greatest ease when there is no need for it—that is to say, when the gall-bladder is free from adhesions and perfectly healthy; but in those conditions where it might really be found advantageous—that is, where the gall-bladder is in a condition of chronic suppuration and greatly thickened by disease—the operation would be an absolute impossibility in the living body. Therefore, before we can judge as to its mortality, we must know not only how many cases have been performed, and what the mortality of these is, but we must know how many times it has been

begun and left unfinished, and he ventures to say that the list will be found to be an immensely heavy one.—*Lancet*, June 29, 1889.

Chlorotic Dysmenorrhœa.—DR. MONIN, in the *Revue de Thér. méd.-Chir.*, June 1, 1889, advocates the following treatment in cases of chlorotic dysmenorrhœa:

R.—Spirits of balm	{	aa fʒjv. —M.
Tincture of saffron		
Tincture of iodine		

Sig. Twelve drops after each meal, to be continued for two months. Every week a hot bath should be given, to which should be added about four and one-half ounces of chloride of ammonium.

The Heredity of Myopia.—If the opinions of various ophthalmologists concerning the heredity of myopia were recorded here, the result would be an accumulation of vastly conflicting statements. This, however, would be largely due to lack of precision in investigating the subject. Lately DR. MOTAIS, in *L'Abeille Médicale* of June 17th, has carefully studied both the history and course of disease in 330 cases of myopia occurring in young people, and has arrived at the following conclusions:

1. The hereditary influence of myopia is manifest.
2. Out of 330 cases the families of 219 were afflicted with the same disease. This shows a percentage of 65 per cent.
3. Hereditary myopia is distinguished from acquired myopia by
 - a. Its more early appearance.
 - b. Its more rapid development.
 - c. Its greater severity.
 - d. Its being more frequently followed by other completions.
- In short, hereditary myopia is far more serious than the acquired form of the disease.
4. Myopia is usually transmitted from the father to the daughter (86 per cent.) and from the mother to the son (79 per cent.).
5. The principal conditions which favor the transmission of hereditary myopia are:
 - a. Use of the eyesight under bad hygienic surroundings, whether in school or at home.
 - b. Astigmatism, 14 per cent.
 - c. Microsæmia (diminution of the orbital arch), 16 per cent.

6. The increase of the disease in hereditary cases was, in 6 per cent. of the cases, found to be mainly the fault of those who had charge of the child's education. If care is not taken, acquired myopia will not restrict itself to the individual but may also be transmitted unto their children.

Suprapubic Lithotomy in Young Children.—DR. ALFRED LENDON, Lecturer on Forensic Medicine, University of Adelaide, has operated for vesical calculus in male children under five years of age, three times within twelve months, and with complete success. In each case the rectum was distended with the bulb of a spray-producer as a substitute for Petersen's bag, and the bladder washed out and then distended with boracic acid lotion. The skin-incision in no case exceeded one inch and a half. The bladder was not sutured; the skin wound was

brought together with horsehair, and a drainage-tube inserted which projected into the bladder. The first patient was four years of age; the calculus weighed fifty-eight grains; urine passed through the urethra on the eleventh day, and ceased to pass through the wound on the thirteenth. The second patient was not quite two years old; the stone weighed one hundred grains; urine passed naturally at the end of the first week, ceasing next day to pass through the wound. In the third case the patient was three and a half years old; the calculus weighed forty-five grains; the urine passed through the urethra on the seventh day, and ceased to pass through the wound on the nineteenth. The drainage-tube was removed on the day of the operation in the second and youngest case, on the second day in the first, and on the third day in the third case. Dr. Lendon, who writes his experience in the *Australasian Medical Gazette*, states that, had the proper instruments been available, he would have performed litholapaxy in preference to lithotomy. For a surgeon who had no special experience of vesical surgery, suprapubic appeared in many respects preferable to perineal lithotomy. In Dr. Lendon's case the chief difficulty was the extraction of the stone after the opening of the bladder.—*The British Med. Journal*, July 6, 1889.

Chapped Hands.—The *Revue de Thér. méd. Chir.*, June 1, 1889, gives the following salve, which, it says, is a most valuable toilet article. It keeps the hands white and smooth, and quickly remedies all redness and roughness of the skin:

Lanolin	3ijss
Liquid paraffin	3ijss.
Vaniline	grs. ij.
Attar of roses	gt. j.—M.

The salve should be applied morning and evening.

Inoculation of Tuberculosis through Vaccination.—DR. E. PIPER, in the *Centralbl. für klin. Med.*, June 8, 1889, states that the danger of being inoculated with tuberculosis through vaccination is very slight. As far as human lymph is concerned, practitioners universally abstain from using that of tuberculous, scrofulous, or rachitical subjects. Again, the danger incurred from using vaccine taken from tuberculous animals is very slight, as the virus is usually obtained from very young animals, in which the disease seldom, if ever, occurs.

Dr. Piper, after vaccinating thirty-eight consumptives, subjected the lymph obtained from them to a most careful examination, but failed to find any tubercle bacilli. He further asserts that even in case the bacilli were inoculated during vaccination, that the disease would merely be a local one, and in substantiation of this theory mentions the local tubercles which are frequently found on the hands of those having dissected tuberculous subjects.

Injections of Lemon-juice in Severe Epistaxis.—The *Centralbl. für klin. Med.* of June 15th, says that DR. FAUCHON, of Orléans, France, obtained immediate relief in a severe case of epistaxis by the injection of the juice of a freshly squeezed lemon. So far he has only had the one occasion to use the remedy.

A Formula for Aphthous Stomatitis.—

R.—Salicylate of soda	20 parts.
Distilled water	100 "
Dissolve.	

In cases of aphthous stomatitis the inflamed parts should be painted with the above solution five or six times during the day, particularly after meals. The mouth should previously be well rinsed out with tepid water.—*L' Union Médicale*, June 15, 1889.

Differences of Temperature of the Two Sides of the Body

Symptom of Cerebral Lesions.—At the meeting of the Neurological Society of London, which was held May 10th, PROFESSOR HORSLEY read a paper on clinical observations during the past seven years on the value of differences observed in the temperature of the two sides of the body as symptomatic of cerebral lesions. The lecturer desired to draw attention to the practical importance of the subject. He stated that an analysis of eighteen cases observed by him had proved that notable asymmetry of the two sides of the body occurred when a lesion was situated in what he wished temporarily to call the corpus striatum frontal plane of the hemisphere, this on the surface of the cortex passing through the ascending frontal gyrus. Further, that, as a rule, the converse also was true—namely, the occurrence of a lesion in other parts of the hemisphere was not accompanied by change in the temperature of the opposite side of the body. When, as in the former condition, change did occur, it was, with very rare exceptions, evidenced by a rise of temperature of the opposite side of the body. The solution of the problem could only be determined by experiment, and, until that was done, he deprecated the use of such expressions as "heat centres," etc., the existence of the difference, although a very valuable fact, being only so far ascertained. The discussion was continued by Dr. Hughlings Jackson, Dr. Bastian, Professor Schäfer, Dr. Beevor, and Dr. Mickle. There was a general agreement on the facts of the case, and their practical and scientific importance; but it was felt that much clinical and experimental work must yet be done before certainty of interpretation could be reached.—*British Medical Journal*, June 22, 1889.

Pylorectomy.—We learn from the *British Medical Journal* of July 6th, that on June 26th SIR WILLIAM STOKES performed the operation of pylorectomy in the Meath Hospital on a female patient, aged forty-eight, suffering from cancer of the pylorus. This is said to be the third case in which this formidable procedure has been adopted in the United Kingdom, Mr. Southam's and Mr. McArdle's cases having been the first and second. The operation, in Sir William Stokes's case, lasted over two hours. The patient subsequently rallied fairly well, and continued to progress satisfactorily up to 9.30 P. M. We regret to learn that she then became alarmingly weak, and notwithstanding the efforts that were made to revive her, the weakness continued to increase, and at 11 P. M. she became collapsed, and died at 11.35 P. M., just twelve hours after the operation. The statistics of the operation so far are not encouraging, for of seventeen cases operated on for pyloric disease, there are said to have been only four recoveries.

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SATURDAY, JULY 27, 1889.

THE MORTALITY OF PNEUMONIA.

WHETHER the mortality of acute pneumonia has changed during the past decades is a question of some importance, and since the appearance of Dr. Hartshorne's paper last year (THE MEDICAL NEWS, April 7, 1888, p. 373), in which he claimed that there was very striking increase, due in part, at least, to change of treatment, a widespread interest has been aroused in the matter. Statistics have been published which could be handled so as to favor either side, and it became evident that we needed a thorough and careful sifting of the figures of one of our large institutions with records available for the past fifty or sixty years. This want has been supplied by the admirable paper of Drs. TOWNSEND and COOLIDGE, in our present issue, who have analyzed with a scrupulous care and painstaking labor in the highest degree creditable, the thousand cases which have been treated at the Massachusetts General Hospital from 1822 until the present day.

The first evident fact in their tables is that a proportionally larger number of cases of pneumonia have been admitted during the last decades, the result doubtless of an increase in the class of citizens which looks to charity for relief in time of sickness.

As to the mortality itself, there has been an almost unbroken rise from 10 per cent. in the 1820 decade to 28 per cent. in the present one, and should the authors' labors have ceased here, their figures would have told heavily in favor of the great increase of

the death-rate. There are, however, important modifying influences which must be considered. In Chart IV. the important influence of age upon the mortality is shown, a rapid increase occurring after the thirtieth year. The records show that a proportionately greater number of patients over fifty have been admitted in the later decades, the average age having increased from twenty-five and a half years in the twenties to thirty-four and a half in the eighties. A study of the complications, and of the previous condition of the patient, whether delicate, or whether addicted to alcohol, is given in Chart VI., which indicates that the ratio of such cases has greatly increased, rising from about 10 per cent. in the thirties to over 25 in the sixties. The race factor as an influence has become extremely important, particularly in our large city hospitals, in which the Italians and Huns are now so common. Among the native Americans the percentage of all the fatal cases is lower than in the Irish or other foreigners, and excluding the complicated cases, the percentage is still more striking: Americans, 9 per cent.; Irish, 11 per cent.; and other foreigners, 14 per cent. In the earlier decades the relative proportion of American patients was very much greater, as shown in Chart VII.

In short, the accurate sifting of the figures, and a study of the history of individual cases, bring out clearly that three important factors have influenced the mortality, viz.: a steady increase of the average age; an increase in the number of intemperate and of delicate patients, and of the complicated cases; and a great increase in the proportion of the foreign-born. Chart X., which represents the mortality in decades, excluding all cases which died over fifty years of age, or which were intemperate or delicate, or with serious complications, shows extremely little variation throughout the entire period of seventy years, and the authors conclude that at the Massachusetts General Hospital the mortality of acute lobar pneumonia has remained practically the same from 1822 to 1889.

An interesting analysis is also given of the change in treatment. Chart XI., showing the period of treatment in the heroic, transitional, and expectant stages, would seem to indicate that this rise of mortality in the total number of cases took place during the period prior to 1860.

It is interesting to note that the stay in hospital has varied very little in the different decades from a period of three weeks and four days.

The authors are to be congratulated upon this excellent piece of work, which will be duly appreciated by the profession, all the more as it comes from the "Massachusetts General," the hospital of Jacob Bigelow and of Jackson, of Channing and of Ware, of Shattuck (Sr.) and of H. I. Bowditch—men who have adorned our calling, and whose patient labor in the past made the present contribution possible.

THE SANITARY ADMINISTRATION OF DAIRY FARMS.

MILK inspection, as usually practised, has for its object the detection, by chemical analysis, of impurity and adulteration, and is, therefore, of great economic and hygienic advantage. The tests are made of samples procured at various points of distribution, but the investigation rarely extends to the source of the supply. By thus limiting the inquiry to the condition of the supply as furnished for distribution, a not uncommon and most important source of contamination is left entirely unguarded, and may not even be suspected until an outbreak of disease leads to an investigation of its cause.

The evidence is not wanting to show that cows' milk may serve as the disseminator of infectious disease among human beings. Typhoid fever, scarlatina, and diphtheria have all been disseminated in this way. It is now generally admitted that tuberculosis may be conveyed through the medium of cows' milk. Unfortunately, chemical analysis is of no avail in detecting the subtle infections which communicate these disorders, and hence the tests usually applied afford no protection against a possible source of virulent disease. There is evidently pressing need of enlarging the scope of inspection by making it include a rigid inquiry into the sanitary administration of the dairy farms themselves. *The Practitioner* for January, 1889, contains an article on the last-mentioned subject by DR. SHIRLEY F. MURPHY, which exposes the deficiencies of the ordinary methods of inspection, and shows how they may be remedied.

The health of the cow in its relations to the health of the drinkers of her milk, and the protection of milk from unhealthy surroundings and against infection or contamination, are subjects which have received more consideration in England than in this country. The English Contagious Diseases (Animals) Act of 1878 gave to the Privy Council power to issue general or special orders for the registration

by the local authority of all persons carrying on the trade of cowkeepers, dairymen, or purveyors of milk, for the inspection of cattle in dairies, for prescribing and regulating the lighting, ventilation, cleansing, drainage, and water-supply of dairies and cowsheds, for securing the cleanliness of milk-stores and milk-shops, and of milk vessels used for containing milk for sale; and, lastly, for prescribing precautions to be taken for protecting milk against infection or contamination. This Act was further supplemented by the Acts of 1885 and 1886, which extended the authority already conferred. The legislation is, however, faulty in an important particular, inasmuch as it takes no cognizance of the circumstances under which the cow is placed in the meadows. It is very essential to the health and good condition of the cow and of those who drink her milk, that the drinking-water should be free from excremental and other pollutions. This fact seems to have been entirely lost sight of.

With its defects, however, the English law is far superior to any legislation that we in this country have upon this subject. In fact, sanitary legislation applicable to the cow in her shed and to all the circumstances of her life, her individual cleanliness and health, and the diseases which are known to have an effect upon her milk, is only beginning to attract attention. The sanitary regulation and the improvement in the condition of dairy farms have been due to the desire of dairymen to meet the requirements of modern knowledge rather than to the necessity of complying with statutory obligations. Injury to business incident to outbreaks of disease through the sale of impure milk has also been an incentive to vendors of milk to insist upon the regulation of dairy farms in a manner to prevent such calamities.

Milk being so universal a beverage, and the facility with which it may be the carrier of infection, imparted to it mainly at the farm, being recognized, the systematic inspection of dairy farms under adequate regulations is imperatively demanded in the interests of the public health. These regulations should be broad in their application, and made uniform for an entire State. It is commonly the case that milk produced in one county is distributed entirely beyond its limits, and hence local laws may be inoperative against the source of the evil.

Milk infection may be the effect of human agency; at least, it is safe to adopt this theory until disproved. It is also believed that the cow herself can suffer from some malady which may give rise to it. The

precautions prescribed by the law should be taken for the exclusion of both possibilities. The health of the cow should be maintained by the strictest attention to her hygienic surroundings. Pure water for the cow to drink, and for washing the pails and cans, is most essential. The cleanliness, ventilation, and drainage of the sheds are also matters of great importance. The milk should be guarded against contamination in handling and in storage. Persons suffering from dangerous infectious diseases should be prohibited from milking cows, handling milk vessels, and from taking any part in the business. Cases of infectious diseases arising in a herd should be isolated at once. The habit in Denmark of washing the hands after the milking of every two cows, is a useful precaution against the communication of dangerous udder disease. Udder disease undoubtedly impairs the wholesome quality of the milk. Infantile diarrhoea has not infrequently been traced to this disorder. When tuberculosis affects the udder, there is danger of transmitting the disease to the consumers of the milk. The prevalence of tuberculosis in cattle whose flesh is used for food, and the proof of the infectiousness of the milk of tuberculous cows, furnish sufficient reason for rigid inspection and for precautions, not only in the use of the milk, but also of the flesh of animals thus diseased.

The quarantining of infected animals and the withholding of their milk from the market, should also include the prohibition of the removal of any animal of such a herd, as a means of restricting the spread of the disease. Regulations for the sanitary administration of dairy farms are for the benefit of the dairyman as well as the consumer of milk. If judiciously administered they need not work any injury, for, as Dr. Murphy remarks, "they are to be used more for the purposes of education than for prosecutions, and the latter is reserved for cases of flagrant disobedience." In the absence of such regulations there is no certain knowledge of the quality of the milk distributed, and the supply must therefore be regarded with suspicion. The consumer, however, can protect himself by boiling the milk, a plan which is now generally recommended, and which should be adopted when there is real danger of infection, and, in fact, whenever there is no definite knowledge of the source and quality of the milk.

As will be seen by a notice in our News Item column the annual meeting of the State Medical Society of Pennsylvania has been further postponed

until June of next year. In view of the decided indications of the improbability of being able to obtain a successful meeting in September, and of other concomitant reasons, the Committee of Arrangements has acted wisely in assuming the authority and deferring the meeting until next year.

THE profession of Chicago will not long be without a great medical library. A nucleus of three thousand volumes has been secured by the purchase of the collection of the late Dr. J. S. Jewell; a few medical men uniting, on very short notice, to save it from dispersion under the auctioneer's hammer. The *Journal of the American Medical Association* intimates that a temporary lodgement of this choice collection will be found with the Chicago Public Library until a suitable centrally located building can be procured.

DR. JOHN B. ROBERTS has been elected Professor of Surgery in the Woman's Medical College of Philadelphia, to succeed Dr. W. W. Keen, resigned.

DR. CHARLES B. NANCREDE, of Philadelphia, has just been elected Professor of Surgery in the University of Michigan, Ann Arbor.

DR. JOHN A. CONNER, who was graduated at the University of Pennsylvania, Class of 1867, and who is the Medical Officer of the United States Commission to the International Exhibition in Paris, has been authorized by the French Government to practise his profession in France with his American diploma, not having passed his French medical examination. He is the third American who has been officially allowed to practise medicine in France without a French diploma, Dr. Marion Sims, of New York, having been the first one.

THE *Breslauer ärztliche Zeitschrift* came to an untimely end on June 29th, it having been found impossible to secure the services of an editor of a "commanding personality" to supply the place of the late Professor Gscheidlen, who founded the journal and gave to it the high position it held in German medical literature during the ten years of its existence.

THE School of Medicine in Mexico comprises eighteen professors, and the curriculum lasts five years. Most of the text-books in use are translations of French standard works.

SOCIETY PROCEEDINGS.

AMERICAN OTOLOGICAL SOCIETY.

Twenty-second Annual Meeting, held at New London, Conn., July 16, 1889.

The Society was called to order by THE PRESIDENT, DR. J. S. PROUT, of Brooklyn.

DR. B. ALEXANDER RANDALL, of Philadelphia, read a paper on

INFLAMMATION OF THE TYMPANIC ATTIC AND PERFORATION IN SHRAPNELL'S MEMBRANE.

He reported twenty cases, fifteen of which had been seen in the past six months, and urged that the condition was not a rarity. It often coexists with one or more perforations of the other parts of the drum-head. If sought and recognized early, it is a less tedious and serious matter than these attic inflammations are generally considered to be. He cited some 120 cases reported by several observers among 10,000 patients, and while he had seen a still larger proportion, accepted this as the average. Passing over the treatment as having been already thoroughly discussed, he turned to the question of causation, and cited the views of Walb that infection from without through the "foramen Rivinii" was the starting-point. Contesting the view that any colotomy opening in the flaccid membrane was wholly negatived by modern embryologists, he urged that the individual variations in the septa in the attic predisposed some cases to localized inflammations and led to perforation at this point; and that these cases, neglected or recurrent, formed the group from which the usual obstinate cases were derived. He, therefore, advocated scrupulous search in all cases for disease in this locality as promising to nip in the bud what might later become a disease notoriously difficult to control.

DR. S. O. RICHEY, of Washington, did not think that perforations of Shrapnell's membrane are so common as had been stated. His experience with the absence of perforation corresponds with that of others. He had had cases in which perforations in other parts of the drum healed, but the perforation in Shrapnell's membrane persisted. In treating these cases, besides using measures through the external auditory meatus, he had employed injections through the catheter consisting of nitrate of silver, 1 part; boric acid, 10 parts; glycerine, 20 parts; and water, 500 parts.

DR. GORHAM BACON, of New York, had not observed this condition so frequently as Dr. Randall. It is often difficult to see these perforations. In treating he had generally used Blake's extra-tympanic syringe. By persistent syringing and the use of astringents, cicatrization is often produced. These cases are, however, very tedious.

DR. J. A. ANDREWS, of New York, said that in treating these cases in which there is purulent inflammation of the attic with a large hole in Shrapnell's membrane, after injecting the cavity, he sucked out the fluid by means of an instrument consisting of a delicate metal tube with a curved extremity, to which is attached a rubber tube. He used a boric acid solution. After sucking out the fluid, he dried the cavity with cotton wrapped on a probe, and then blew in a fine cloud of boric acid,

DR. HERMAN KNAPP, of New York, said that there is a capital difference between perforations in the upper and those in the lower part of the drum membrane. Those in the lower part may close in a few days, while in the upper part they may continue for months or years. He thought this is due to difference in anatomical structure. The lower portion is a specific tissue with little association with periosteum, while the upper part is a duplicate of periosteum and skin. When the latter part is affected, the process extends to the periosteum leading to caries and necrosis of the bone.

DR. F. M. WILSON, of Bridgeport, Conn., reported

THREE DEATHS FOLLOWING SUPPURATIVE OTITIS, WITH TWO AUTOPSIES.

Cases in which death follows a first attack are so rare that it was thought of value to report these cases. The first patient was aged forty years, and for two weeks before coming under observation, had had pain in both ears. February 27, 1888, the pain in the left ear became very intense. March 1st, he became partially unconscious, and remained so with occasional convulsive movement until March 6th, when he died. The mastoid was drilled half an inch but no pus found. No autopsy was made.

The second case, a male, aged twenty-three years, was attacked with subacute otitis March 11th. Symptom of meningitis appeared with high temperature, and he died March 27th. At the autopsy one-third of the base of the cerebrum was involved in the purulent process, which extended up under the frontal convolutions. There was about half an ounce of turbid fluid between the dura mater and inner meninges. There was pus in the labyrinth and in the tympanic cavity.

The third case was that of a boy, aged ten years, who was attacked with suppurative otitis September 5th, and died about ten days later. At the autopsy the meninges were found normal, but an abscess containing two drachms of fluid was found in the cerebellum.

DR. WILSON also presented a mastoid drill provided with a guard which could be set at any desired point regulating the distance to which the drill entered. The edges of the drill are sharp, so that the opening can be enlarged horizontally to any desired extent.

DR. GORHAM BACON thought that in these cases, where we do not find any collection of pus in the mastoid cells, we are justified in investigating the condition of the brain.

DR. J. O. TANSLEY had had several of these cases, and has, without success, sought for some means by which we could differentiate between those in which there was meningitis and those in which there was abscess. In one case, Dr. Seguin made a diagnosis of abscess based upon conjugate deviation of the eyes. Subsequent autopsy showed the correctness of this diagnosis. In another case, the speaker suspected abscess, Dr. Weir opened the mastoid, but found no pus. He also exposed the cerebrum, and, two days later, the cerebellum, but found no pus. The patient died of suppurative meningitis.

DR. S. D. RISLEY showed that in the differential diagnosis attention to the temperature, in connection with symptoms of pressure, is of great importance. In meningitis the temperature from the outset will be higher than in abscess, and the symptoms of pressure come on later.

DR. J. A. ANDREWS, of New York, said that in the past year he had made a number of autopsies in cases of brain abscess. Brain abscess may continue for a considerable time without any very positive symptoms, but where there is meningitis or phlebitis, especially phlebitis, there is usually a sudden rise of temperature with chills.

DR. OREN D. POMEROY, of New York, related a case of brain abscess secondary to tympanic disease, in which the only marked symptom was a sudden rise of temperature, sometimes going up in half an hour from normal to 107°. Intelligence was unaffected until the last, the man gradually improved, but died suddenly. The autopsy showed a large abscess of the brain covering the petrous portion of the temporal bone.

DR. ARTHUR MATTHEWSON, of Brooklyn, said that it is often difficult to make a diagnosis between abscess and meningitis, and, in fact, many are mixed cases. In meningitis the pain is more marked than in abscess. In meningitis there is more likely to be optic neuritis, while in brain abscess he had noted a peculiar dark appearance about the retinal veins.

DR. SAMUEL THEOBALD, of Baltimore, thought that the treatment of the preliminary stage of these cases is important, and that a great deal might be done to prevent the occurrence of the conditions referred to. He had found benefit from local applications, especially atropine and cocaine, and morphine and cocaine. If the bowels were constipated, he should use a calomel cathartic. If there should be symptoms of cerebral implication, he should administer mercury in some form to secure its constitutional effect.

DR. E. FRIDENBERG, of New York, said that during the past eighteen months he had made autopsies on two patients who died from cerebral abscess. In one case suppuration had lasted a year, but there had been no symptoms until a week before death, except irritability of temper; there was some odor, but very slight discharge from the ear. A week before death the patient developed pain in the ear, slight tenderness over the mastoid, followed by fever and symptoms of brain pressure. A small abscess was found in the temporo-sphenoidal lobe. The roof of the tympanum was carious, and the meninges strongly adherent. In the second case the patient had had suppuration for years. Two months before death headache occurred, which was relieved by treatment. It recurred with fever; there was some pain on pressure over the mastoid process. The symptoms again disappeared under treatment. Three weeks later he returned with similar symptoms. The next morning vomiting occurred, and that evening he died. An abscess containing two ounces of pus was found in the temporo-sphenoidal lobe.

DR. T. Y. SUTPHEN, of Newark, thought that these cases of brain trouble almost invariably follow the arrest of the flow of pus. We should look upon them as instances of local trouble, and should treat the middle ear by fomentations, and, perhaps, by poultices to bring about free discharge of pus.

DR. R. A. REEVE, of Toronto, stated that in one case of death following acute suppurative otitis, there was the most profuse purulent discharge that he had ever seen, and it continued from beginning to end.

DR. B. ALEXANDER RANDALL referred to a case of cerebral abscess which occurred in his practice last year in a boy the subject of scrofulous disease of the elbow

and other joints. He found both ears discharging, with caries of the auditory meatus on both sides. On the left all the mastoid tissues were involved. Under treatment the right side rapidly improved, and on the left side there was also improvement. The case was then transferred to his surgical colleague. Six weeks later the ears were still in good condition, but the patient was gradually failing from the constitutional trouble. An hour before death there was suddenly a discharge of at least two ounces of fetid pus from the ear. There was no meningitis, but a large abscess cavity was found in the sphenotemporal lobe, one-half inch from the tympanum, and connected with it by a sinus.

In cases where it is thought justifiable to perform exploratory trephining of the brain, an admirable and safe point is one and one-fourth inches behind, and an equal distance above the upper posterior margin of the osseous meatus. This avoids the major bloodvessels, and it would be possible to reach the cerebellum through it.

DR. E. E. HOLT, of Portland, Me., reported a case of

COMPLETE CLOSURE OF BOTH EXTERNAL AUDITORY CANALS BY BONE IN A PATIENT HAVING GOOD HEARING POWER, WITH A PREVIOUS HISTORY OF CHRONIC SUPPURATIVE OTITIS MEDIA.

T. M., aged eighteen years, was seen in April, 1889, for an affection of the eye. It was incidentally learned that he had had abscesses in both ears when seven years old, and the ears discharged more or less for six years, but stopped entirely five years since. Examination showed the canals of both ears of about half the usual length and occupied by a continuation of the skin of the meatus with no appearance of the membrana tympani. There was complete closure of the canal by what appeared to be bone by all the tests employed. The hearing power for the voice was good. The stop-watch was heard only when close to the ear; the tuning-fork was heard about ninety seconds both by bone and aerial conduction. König's rod of thirty thousand vibrations per second was heard by both ears. He heard less distinctly when both ears were closed by pressure on each tragus. Shutting the mouth and closing the nostrils did not seem to effect the hearing power much, if at all. Cases with closure of one meatus with the skin of the canal continuous over the obstruction have been observed, but the hearing power is very defective. Cases in which there is a small opening between the exostosis and the walls of the meatus are not uncommon.

DR. S. THEOBALD said that four or five years ago he reported a very similar case. The newly formed membrane was, however, nearer the orifice. The hearing power was good.

DR. HOLT also stated a case of

OTITIS MEDIA CATARRHALIS ACUTA,

accompanied with facial paralysis and impairment of accommodation of the eye of the affected side.

Judging from statistics, one would be led to believe that paralysis of the facial nerve in connection with acute catarrhal inflammation of the middle ear was not a common complication. In many cases the pain having been slight, and having passed off, and the paralysis having come on, the patient's attention is directed to this and he seeks advice for the latter affection, and the cause of the paralysis is recorded "a cold" or "rheumatic."

F. L., æt. twenty-four, seen May 19, 1889. Seven days before took cold, and right ear began to pain that night. This pain continued three days, when it subsided, and on the fourth day he was unable to use his lips properly. Examination showed all the characteristics of facial paralysis. Testing the eyes, there was found paralysis of accommodation of the right eye. This he knew to be a fact because he had previously had the patient under his care and recorded the test of his eyes; and also by the fact that since the improvement of the paralysis of the face the paralysis of accommodation had disappeared.

DR. S. O. RICHEY then read a paper on

THE PHYSIOLOGY OF THE INTRA-TYMPANIC MUSCLES,
which was the elaboration of a suggestion made by him at the Congress of American Physicians and Surgeons, in 1888.

EVENING SESSION.

DR. GORHAM BACON read a paper on

CYSTS OF THE AURICLE.

Of late a number of cases of so-called cysts of the auricle have been reported. Not one of them, however, seems to represent a genuine cystic tumor such as is found in other parts of the body. They all were situated on the anterior surface of the pinna and were of rapid development. They either were the results of traumatism and contained a sanguinolent fluid, or they developed without known cause. Mild inflammatory symptoms were present in all. The development within two or three weeks in almost all cases distinguishes them clearly from the slow and absolutely non-inflammatory development of true cystic tumors. All got well either by spontaneous absorption or by incision. He had seen at least half a dozen of these cyst-like sub-perichondrial swelling of the auricle. He considered them to be mild cases of perichondritis for these mild cases of circumscribed perichondritis may, instead of getting well, remain in this condition for a time and then develop into the full picture of a diffuse perichondritis. He reported such a case.

DR. KNOPP also described a case of genuine cyst of the auricle occurring in a girl nineteen years of age. The growth was double the size of a large fibert, distinctly cystic and had developed without known cause and without any inflammatory symptoms. The cyst was removed by operation, without rupture and was exhibited. These tumors are not frequent in the auricle, but they cannot be so rare as we might infer from otological literature.

DR. WILLIAM H. CARMALT, of New Haven, reported a case of

EPITHELIOMA OF THE MIDDLE EAR.

The patient a robust man, aged forty-seven years, was first seen in June, 1888, on account of a suppurating ear (left) which had existed forty-two years and had followed measles. The ear had given him no inconvenience with the exception of the discharge until a few weeks before he came under observation. He then began to have pain in and around the ear and the discharge was exceedingly offensive. The canal was blocked by a ragged but firm excrescence, very sensitive to touch. There was slight tenderness, but no

swelling or pitting over the mastoid. The pain radiated through the side of the head and interfered with sleeping. At the second visit, the left side of the face was completely paralyzed. The case was regarded as one of epithelioma of the skin of the canal. The patient was seen by another gentleman, who thought the trouble might be a carious antrum. An attempt was, therefore, made to open the antrum, but the bone around it was so sclerosed that the cavity was practically obliterated. There was nothing of the nature of an abscess in the mastoid. The incision was then prolonged through the soft parts and into the external auditory canal. A mass of soft tissue was removed which proved to be carcinomatous and a drainage tube inserted. In the course of a few weeks the ear again became blocked up and the skin became involved. With the object of alleviating some of the distressing accompaniments of the condition, another attempt was made to clear it out. By chiselling away the bone posteriorly, free access to the ear cavity was obtained and the bone scraped apparently clean. No auditory apparatus was seen, simply a mass of carcinomatous tissue. The cavity was washed with a solution of resorcin and for a time the wound did well, but subsequently the disease reappeared. The discharge again became offensive and the patient exhausted and he finally bled to death without the condition being detected, probably from erosion of the lateral sinus. No autopsy was permitted.

EXECUTIVE SESSION.

THE ELECTION OF OFFICERS

for the ensuing year resulted as follows:

President.—Dr. Oren D. Pomeroy, of New York.

Vice-President.—Dr. Gorham Bacon, of New York.

Secretary and Treasurer.—Dr. J. J. B. Vermoyne, of New Bedford, Mass.

Members of Executive Committee of Congress of American Physicians and Surgeons.—Dr. W. H. Carmalt, of New Haven; alternate, Dr. F. B. Loring, Washington, D. C.

A committee consisting of Drs. S. C. Ayres and William W. Seely, was appointed to prepare a minute on the death of Honorary Member Dr. E. Williams, of Cincinnati.

The Society then adjourned.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Twenty-fifth Annual Meeting, held at New London, Conn., July 17 and 18, 1889.

WEDNESDAY, JULY 17TH.—MORNING SESSION.

The Society was called to order by the President, WILLIAM F. NORRIS, M.D., of Philadelphia.

DR. CHARLES S. BULL, of New York, presented

AN ANALYSIS OF NINETY CASES OF SIMPLE CHRONIC GLAUCOMA, WITH SPECIAL REFERENCE TO THE EFFECTS OF IRIDECTOMY UPON THE ACUITY OF VISION AND THE VISUAL FIELD,

and the following conclusions were formulated:

In endeavoring to draw some rational conclusions from the study of ninety cases, it seems wise to begin with a quotation from Priestley Smith, to whom ophthal-

mologists owe so much of their knowledge of the pathogeny and pathology of glaucoma.

1. In considering the expediency of an operation in chronic glaucoma, he says: "In every case of chronic glaucoma the responsibility of advising an operation is a heavy one, and should on no account be undertaken without full explanation to the patient or his friends of the almost positive certainty of blindness on the one hand, and of the uncertainties which beset the operation on the other. Having regard to the age of the patient, the impossibility of great benefit and the possibility of a painful and accelerated progress, the prudent surgeon will only operate on the express desire of the patient to secure the only possible chance of benefit, however small it may be." Armed with the preceding precaution, it seems to be our duty to operate in cases of chronic progressive glaucoma, and the earlier the better.

2. If the disease in a given case seems to be stationary and is still in the primary stage, and if it be possible to test the vision and the visual field at short intervals, delay in operating is permissible; but a weak solution of eserine or pilocarpine should be used daily, merely as an aid in controlling the course of the disease. The examination of these patients should be at short intervals and should invariably include tests for visual acuity and the careful examination of the visual field.

3. If the disease exists in both eyes but with useful vision in both eyes, the eye in which the disease is the more advanced should be operated on without delay; and the surgeon will be guided in his treatment of the fellow eye by the result of the operation on the first eye.

4. To insure the best result, the incision should be made well in the sclerotic with a narrow cataract knife or a broad lance knife, and the entire iris, from one end of the incision to the other, should be carefully torn or excised from its insertion.

5. The most carefully performed iridectomy by skilful hands is sometimes followed by rapid loss of what sight still remains; sometimes partial, but, unfortunately sometimes total.

6. A successful result is in the majority of cases more likely to follow the operation if it is performed early in the course of the disease, but the maintenance of the existing degree of vision even in these cases is not inviolable.

7. As regards the question of symmetry, it is probable that in the large majority of cases, probably as much as eighty per cent., the disease is sooner or later present in both eyes, and a careful study of the cases seems to establish the fact that there can be no specific interval of time which insures the second eye against an attack.

8. If the patient is old and feeble and one eye is still free from disease for a year or more after the other eye has become affected, it may be considered prudent to avoid an operation on the affected eye; as it is probable that the unaffected eye may remain free during the remainder of the patient's life.

9. The condition of the field of vision is no constant guide either in forming a prognosis as to the progress of the disease or in deciding as to the time of operation.

10. The acuity of vision bears no constant relation to either the success or failure of the operation.

11. The anterior chamber is usually shallow, is occasionally entirely absent, but is often apparently normal in depth. The condition of the chamber gives no reliable

hint as to the state of the vision or of the visual field nor any indication as to prognosis.

12. The appearance and motility of the iris appear to have some bearing upon the prognosis, though perhaps not to the extent believed by Nettleship. The latter states that in the cases in which the iris reacts rapidly to eserine the operation proves successful. This has not always been the experience of the reporter, but in the majority of the cases in which eserine caused rapid contraction of the pupil, the visual acuity was fairly good and the field was not seriously limited.

13. The depth of the excavation in, and the color of, the optic disk seem to have no close connection with the defective vision or with the limitation of the visual field, nor did they offer any constant guide as to prognosis or to the effect of an operation upon the progress of the disease.

14. The condition of the intra-ocular tension is a very uncertain guide in deciding the time for operating. It may be normal or increased or even diminished. It does not even seem to bear any constant relation to the degree of visual acuity or to the state of the visual field. The steady maintenance of the increased tension, however, without any diminution, almost invariably indicates the necessity for an immediate operation, and this necessity is especially indicated if the tension is continually on the increase.

15. The health and age of the patient exert a decided influence upon the effect of the operation. Any marked evidence of senility is distinctly unfavorable to operation.

DR. H. KNAPP, of New York, said that during the past nineteen years he had operated on 670 cases of glaucoma, 226 of which were cases of chronic glaucoma. He thought that the prognosis may be a little more favorable than had been indicated by Dr. Bull. He had had four cases in which malignant disease followed operation for chronic glaucoma. He did not agree with the author as to the advisability of the continued use of pilocarpine or eserine in those chronic cases where operation seems doubtful. He advised its use when there are recurrent symptoms. In prognosis he was guided a great deal by the condition of the iris. His operations had been done with the lance-shaped knife. He considered it of great importance to reduce carefully the edges of the coloboma, not only by external pressure, but also by the use of the blunt probe. He was also careful not to make the operation too peripheral. Peripheral wounds are more liable to cystoid scars.

DR. EMIL GRUENING, of New York, then read a paper on

IRIDECTOMY IN GLAUCOMA.

He classified the different forms of glaucoma under the following heads: 1, acute inflammatory; 2, chronic inflammatory without visible degenerative changes in the iris; 3, chronic inflammatory glaucoma with visible degenerative changes in the iris; 4, simple glaucoma; 5, intermittent glaucoma; and described cases illustrative of these different varieties.

DR. S. O. RICHEY, of Washington, did not believe that simple chronic glaucoma was entirely a local affection. He thought that it is a local expression of a cause to be looked for in the nervous system. He had used eserine with satisfaction in the early stages, but supported

it by galvanism applied to the cervical ganglia. In some cases this will result in the avoidance of an operation.

DR. SAMUEL THEOBALD, of Baltimore, had met with one case in which an attack of pronounced acute glaucoma was cut short by the use of eserine.

DR. BULL thought that eserine is frequently used in too strong solution. A solution of half a grain to the ounce may cause iritis after a single instillation. He never uses a stronger solution than this, and often uses one as weak as one-tenth of a grain to the ounce.

DR. B. ALEX. RANDALL, of Philadelphia, confirmed the remarks in regard to the value of weak solutions. In one case of severe absolute glaucoma a solution of one-eighth of a grain to the ounce was entirely successful in relieving the pain. It has been used steadily for three years with no recurrence of the severe symptoms, and without the intervention of any inflammatory trouble.

DR. S. D. RISLEY, of Philadelphia, said that in experimenting with weak solutions of eserine, he had found that a distinct effect was experienced from a solution as weak as one-thirtieth of a grain to the ounce. If this was applied three times a day, it would, in two days, cause distinct brow-ache. He had seen benefit from weak solutions where stronger solutions failed to give relief.

DR. HENRY D. NOYES, of New York, said that one point to which his attention was called many years ago was that in certain instances of evident glaucoma with a large amount of refractive error, it had seemed that the aggravation of the glaucomatous disease had been dependent upon the accommodative strain. In operating he had gradually withdrawn from the extremely peripheral place of incision. He preferred to come closer to the border of the cornea than some do. This involves less risk, and is easier of performance.

DR. THEOBALD's experience tended to convince him that astigmatism is frequently the cause of glaucoma.

DR. ARTHUR MATHEWSON, of Brooklyn, said that in one case of glaucoma in which iridectomy had been done without arresting the progress of the disease, a large injection of strychnine caused a decided improvement of vision, which continued. He had used it in other cases with good effect.

DR. EMIL GRUENING then read a paper on

THE USE OF THE CURETTE IN ANTERIOR TRACHOMA.

After referring to the various measures proposed for the relief of this condition, he described an operation which he had employed in eleven eyes during the past two years. A six per cent. solution of cocaine was first instilled. The surface of the cornea and the vessels present were then scraped away with a gouge-shaped instrument, and the vessels followed well on to the conjunctiva. The eye was then washed with boric acid solution and warm compresses applied for four or five days. In three days new vessels formed and the operation was repeated. The ultimate result in all the cases was highly satisfactory. In old and protracted pannus this operation may be recommended for its directness, simplicity, and efficacy.

DR. S. D. ST. JOHN, of Hartford, had used this operation in one case with the highly gratifying result of increasing the vision from $\frac{4}{CC}$ to $\frac{16}{CC}$. This has since still further improved.

DR. H. F. HANSELL, of Philadelphia, read a paper on CORNEAL ABSCESS,

describing its symptoms and referring to the differential diagnosis between it and ulcer. He protested against the use of cocaine in abscess or other inflammatory conditions of the cornea. A few drops of a strong solution will often destroy the epithelium. Instillation of eserine alternating with atropine was recommended. Operative interference should be limited to evacuation of the pus.

DR. CHARLES J. KIPP, of Newark, then made some FURTHER OBSERVATIONS ON MALARIAL KERATITIS.

He had called attention to this condition in a paper read before the Society, in 1880. He had seen one hundred and twenty cases of the disease. In all there had been paroxysms of malarial fever, and in ninety per cent. the corneal inflammation followed a few days after a paroxysm. In twenty-five per cent. the patients had suffered from similar trouble in previous attacks of malaria. The inflammation of the cornea occurred in the form of serpiginous ulceration, with narrow prolongations. The trouble began as a line of small grayish elevations, which soon broke down, forming a furrow of ulceration. In mild cases the duration is two or three days, while in severe cases it may last several months. There is a marked tendency to recurrence in subsequent attacks of malarial fever. In a few cases he had seen a similar affection in non-malarial individuals. The treatment consists in remedies directed to the general condition, and, in mild cases, with warm fomentations. In severe cases a one or two per cent. solution of nitrate of silver applied directly to the furrows after the use of cocaine answers well. In some very severe cases the actual cautery was employed. This arrested the progress of the disease and stopped the pain, provided the malarial trouble had previously been cured.

DR. NOYES said that during the past fifteen or twenty years he had met with cases of superficial keratitis due to malaria. It is rare to find the deeper tissues invaded. He was led to suspect a malarial origin in cases in which there is exaggerated tenderness of the supraorbital nerve and distinct anesthesia of the surface of the cornea. The form of ulcerative keratitis which has been described, he regarded as of mycotic origin, and had cured it by scraping thoroughly the lines of infiltration.

DR. T. Y. SUTPHEN, of Newark, had seen cases similar to those described by Dr. Kipp in patients suffering with malaria, and in which there had been no distinct chill; the individuals have resided in malarious districts.

DR. JOHN GREEN, of St. Louis, had seen many cases in which malarial fever was followed by superficial keratitis, or keratitis modified by neglect or improper treatment. He had not met with the form described by Dr. Kipp.

DR. GRUENING had seen this form of ulcerative keratitis, but he had associated it with the teeth. These patients had tartar on the teeth, and had been in the habit of moistening the lids with saliva, he thought therefore that the source of infection was in the mouth.

DR. THEOBALD had also seen for many years this keratitis associated with malarial trouble. These cases do not always show ulceration of the cornea. He had in a general way regarded this condition as analogous to

herpes zoster. He had once or twice seen iritis associated with the keratitis following malaria. In one case of malaria he had seen this keratitis with herpes zoster of the temple.

DR. J. A. LIPPINCOTT, of Pittsburg, read a paper on

IRRIGATION OF THE ANTERIOR CHAMBER.

This procedure is useful for the removal of débris in cataract extraction and of clotted or liquid blood. In order to accomplish this successfully it is necessary to have an apparatus which can be readily made and kept aseptic; which will always be ready for use; which can be easily handled and the movement controlled with one hand; whose ejecting force is capable of being easily regulated; and which is free from liability of forcing air-bubbles into the anterior chamber. As fulfilling these requirements he exhibited an apparatus consisting of a small metal receptacle with which was connected a rubber tube ending in a metal nozzle; the flow of liquid being controlled by a short piston in a rubber handle through which the rubber tube passed. The ejecting force can be varied by elevating or lowering the receptacle.

DR. GRUENING exhibited a small flask devised by von Graefe for the same purpose.

DR. HENRY D. NOYES then read a paper on

ENUCLEATION OF THE EYE IN PAN-OPTHALMITIS.

There have been reported by various observers thirty or forty deaths following enucleation, almost all from meningitis. About one-half of the fatal cases have occurred after enucleation during acute suppurative panophthalmitis. At the New York Eye and Ear Infirmary there have been no deaths from this cause, when no additional operation in the orbit, such as the removal of tumors, etc., has been done. The number of enucleations from 1868 to 1888 was 1164; the number of eviscerations 17. Pan-ophthalmitis existed in fourteen per cent. of the cases. It seems fair to conclude that while a small risk to life is incurred by enucleation of the eye, the supposed increased risk by the existence of suppurative pan-ophthalmitis is not so far justified by the facts as to bar its performance in this condition.

(To be concluded.)

AMERICAN NEUROLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Long Branch, N. J.,
June 26 and 27, 1889.

(Concluded from page 83.)

JUNE 27TH.—AFTERNOON SESSION.

DR. J. H. LLOYD, of Philadelphia, read a paper entitled

A LATER HISTORY OF A CASE OF FOCAL EPILEPSY FOR WHICH TREPHINING AND EXCISION OF THE MOTOR CENTRES WERE PERFORMED.

Full details of the case had been recorded at the last annual meeting of the Association. At that time but three months had elapsed since the operation, and Dr. Ferrier, of London, had stated in a discussion that the time was too short for a decisive result as to the usefulness of the operation. Now that more than a year had passed further details could be given. Before the opera-

tion the patient had had many seizures daily. There was no fit for four months after the operation. Since that time, however, there had been some ten seizures in nine months.

DR. SPITZKA said there was a minority, but a powerful minority, of clinicians and physiologists who hesitated to accept the dictum that spasms were always of cortical origin when clonic in character and local in manifestation. There were well-authenticated cases of spasms, such as are generally described as cortical, which undoubtedly had their origin in the pons or medulla. He, therefore, thought it premature to advise surgical procedure when there was still doubt as to the position of the convulsive centre. He was of opinion that the seat of irritation in the great majority of cases of epilepsy was in the lower centres, such as Nothnagel's convulsive centre.

DR. MILLS mentioned the case of a man subject to unilateral convulsions beginning in the hand. There was a scar upon the head, and trephining was done at this spot in order to relieve severe pain probably due to trigeminal irritation in the scalp or dura. This operation relieved the pain, but caused the Jacksonian epilepsy upon the other side. The operation was repeated in the same spot, the membranes and cortex being removed to some extent, and with great success. It was an apparent illustration of the fact that convulsions may occasionally be the result of operations themselves.

DR. DERCUM had seen the same case and stated that the dura was not opened in the first operation. At the second trephination the membranes were found united. There was a pachymeningitis. The patient had surgical epilepsy. Six months elapsed between the operations.

DR. LLOYD said it was a question whether one could have localized epilepsy from irritation of lower centres, as Dr. Spitzka had intimated. He had always held the idea that such spasms were of cortical origin. In the case he had just described, the absence of fits for four months led him to believe that he had removed the parts concerned in their manifestation.

He had been hopeful of the efficacy of this method in the relief of such a disorder, and was not yet willing to give up the idea that something may be accomplished in this way. He thought it justifiable to operate again in this same case.

DR. SPITZKA asked if the cortex removed had been examined microscopically, and what was the pathological condition found.

DR. LLOYD answered that the microscopist had reported atrophy of the cortical cells.

DR. SPITZKA remarked that atrophied cells could scarcely be very potent in the production of epilepsy.

DR. LANDON C. GRAY, of New York, then presented a paper upon

THE DIAGNOSTIC SIGNS OF MELANCHOLIA,

in which he called particular attention to the difficulty of diagnosis of simple melancholia at times. It was usually, when in mild degree, confused with neurasthenia. He had recently made a study of eighteen cases of this form, and pointed out what he considered the three cardinal symptoms, viz., depression, insomnia, and post-cervical ache. The last named he thought especially characteristic. This pain was sometimes neuralgic in character, at others vague and continuous. Simple

melancholia such as this should not be confounded with neurasthenia, or melancholy states dependent upon hepatic or nephritic disease, or with non-typical forms of insanity.

DR. H. S. UPSON, of Cleveland, then read a paper in which he considered the relations between

MULTIPLE NEURITIS AND INFECTIOUS CEREBRO-SPINAL MENINGITIS.

Dr. Mills had first suggested the possibility of connection between the two. His own case was briefly as follows: A woman, aged twenty-seven, had intense pain and tenderness in the extremities together with stupor and slight opisthotonus; no electrical examination could be made because of the extreme hyperesthesia. She had had a multiple neuritis a year before but recovered. The autopsy revealed congestion of the pia of brain and cord with marked serous effusion, and a microscopic examination of the ulnar nerve revealed interstitial inflammation there. In the opinion of the author the nerve trunk inflammation was not parenchymatous, but rather of the membranes, and was analogous to the process in the brain and cord; the nerve fibres were secondarily involved. He had not looked for bacteria.

DR. MILLS naturally felt interested in the case. He had had an autopsy on one of his own cases. Portions of nerves and sections of the brain and cord had been examined by Dr. Gray, of Washington, and this examination proved conclusively the association of neuritis with cerebro-spinal meningitis.

DR. SPITZKA referred to the vacuoles in the author's sections, and said retarded lymph outflow might be important in causing the death of tissue and the formation of gas bubbles which these vacuoles must be considered to represent. He had noted also two bodies in the sections larger than ordinary leucocytes, very delicately stained, which the author should have carefully delineated.

DR. C. K. MILLS, of Philadelphia, then gave an abstract of a paper by DR. J. T. ESKRIDGE, of Denver, on a

CASE OF ABSCESS OF THE BRAIN; OPERATION; DEATH ON THE NINTH DAY.

The patient had had typhoid fever. Two months later there was purulent inflammation of the middle ear, and not long after symptoms of brain irritation followed, such as headache, delirium, persecutory delusions together with paralysis of the right hand and right angle of the mouth. The skull was trephined over the face and hand centres, and a purulent inflammation was found under the dura. The wound was then dressed and the patient died nine days later. A widespread suppurative meningitis was found at the autopsy. Dr. Mills thought the case of great practical value. He thought trephining should have been performed in two places, at the centre which had been properly localized and also over the mastoid region where the inflammatory process had originated.

DR. B. SACHS, of New York, presented a paper on the

PERONEAL FORM OF PROGRESSIVE MUSCULAR ATROPHY.

The author reiterated his statement of last year that this form was closely related to Duchenne's type. He gave very full details of the cases of two brothers that

had recently come under his observation through the kindness of Dr. Gibney. The boys were thirteen and ten years of age. There was a gradual development of double clubfoot in both at the age of five years, followed by an atrophy proceeding upward, beginning in the leg and toe muscles and spreading to those of the thigh; in one case also involving muscles of the upper extremities. The knee-jerks were present. In one there was general anaesthesia, in the other paresthesia. There was full degenerative reaction in some of the muscles in one boy, partial in the other. The progressive wasting rendered treatment of this form of clubfoot less satisfactory than that of congenital cases. He would suspect this peroneal form in all cases where acquired clubfoot was associated with progressive wasting of the leg muscles, and particularly if heredity or family occurrence of the disease could also be established.

DR. SINKLER could recall several similar cases, one in particular of two brothers. But doubtless more would be seen if careful attention were paid to the matter.

DR. BIRDSALL did not think the presence of knee-jerk so important a diagnostic point as the author seemed to regard it. He had seen a few cases of old poliomyelitis where the paralysis and atrophy were below the knee, and yet the knee-jerks were quite active on both sides. It could not, therefore, be an essential point in diagnosis.

DR. BULLARD had also observed the presence of the knee-jerk in old cases of poliomyelitis.

DR. PRINCE asked if the author had said that the absence of pseudo-hypertrophy was a diagnostic point between this form and primary myopathies, and was answered in the affirmative. He did not consider this true.

DR. SPITZKA asked if the symmetry and the coincidence of time and intensity, as shown in the photographs, were always the case, and was answered in the affirmative.

DR. SINKLER corroborated two of the speakers as to the presence of the knee-jerk in cases of old poliomyelitis, and cited an instance from his own experience.

DR. GRAY objected to the division of progressive muscular atrophy into groups. Why should there be an arm type, a face type, a leg type? Such division might be carried out indefinitely. A more useful classification would be upon the pathology of the disease, a division into central, muscular, and peripheral nerve lesions.

DR. SACHS said he did not lay great stress upon the presence or absence of the knee-jerk. Yet, in extreme atrophy of the vasti from poliomyelitis the knee-jerk was always absent; and, if it were present, he should consider it a case of progressive muscular atrophy. He had, himself, tried to discard subdivisions as much as possible, but the present classification was a clinical necessity. A better might be made when the pathology is more accurately determined. At present there were spinal and non-spinal cases, but there was no certainty as regarded peripheral nerve cases.

DR. MORTON PRINCE, of Boston, then exhibited some microscopic specimens from the muscles of a case of

PSEUDO-HYPERTROPHY.

The patient was now twenty-eight years of age. The specimens showed a large quantity of connective tissue,

hypertrophy of a few fibres, and great atrophy of many of the fibres. There was also great loss of striation, but no fatty or granular degenerations and no vacuolization.

The meeting then adjourned.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, May 20, 1889.

THE PRESIDENT, CHARLES S. WOOD, M.D.,
IN THE CHAIR.

DR. T. H. MANLEY read a paper on

THE OPERATION FOR STRANGULATED HERNIA BY THE MCBURNEY METHOD, WITH REPORT OF THREE CASES.

He gave a description of the operation of McBurney, and its advantages. As far as he could learn, he was the first to report any cases of strangulated hernia, which had been dealt with by this method, and claimed that for this class of cases it seemed the ideal operation; the operative procedure consisting of a few simple principles which, if correctly understood and intelligently applied, must, generally, lead to successful results.

Briefly stated, they were—the ligating of the sac and the sewing down of the cutaneous margin of the incision to the conjoined tendon, and the aponeurotic structures, in the inguinal variety of rupture; and the securing of a dense cicatrix over the internal ring, the canal having been previously opened to this point.

Case I. was a man, æt. forty-five, who had had a hernia on his left side as long as he could remember, requiring him constantly to wear a truss. At times when his bowels were constipated and he strained more than usual at stool, the protrusion would come down under the bulb of the truss. Sometimes he would have to lie quiet a few hours before he could readily return it. On the morning before he entered Harlem Hospital, however, it came down in greater volume than ever before, and he could not return it. He came into the hospital in the evening and an immediate operation was advised, but he would not consent, thinking that he might reduce it himself, later. On the morning of the third day vomiting commenced, and he was very much reduced in strength when he asked to have an operation done.

In the afternoon he was put under ether, an incision was made from a point about the middle of that line, bounded above by the anterior-superior iliac spine and the pubic symphysis, just over the internal ring; the incision was carried downward over the inguinal canal over the protrusion to nearly the base of the scrotum. By dissecting from above, at the outset, as recommended by McBurney, the neck of the sac was first sought, and the opening continued downward till the serous covering was reached and divided. The hernia was found to consist mostly of intestine; its coat was of a dark, rather ashen hue, and was constricted at the external ring. Dr. McBurney advises that the testis and spermatic cord be left undisturbed, but in this case there was no true sac, neither was the cord or testis visible. In opening up the canal the small, atrophied, undeveloped, generative organ was found and removed. The bowel was now returned, the sac carefully dissected away from adhesions, drawn down, ligated and cut off high up, silk ligatures being employed. The borders of the incision were sewed down, on the one side to the

conjoined tendon, and on the other to the fascia transversalis and the margin of the divided canal—six sutures were employed on each side; then both edges of the wound approximated by the retentive or tension sutures, the whole line of incision dusted with iodoform and carefully packed with iodoform gauze. Over this the usual dressings were applied.

The patient survived the operation but three hours. In this case it was claimed that in delaying the operation until there was profound exhaustion, and septic infection had full play, the effort to relieve him was made only as a forlorn hope, and that had an operation been done earlier he would undoubtedly have recovered.

Case II. was in a man of twenty-five, with a history similar to the preceding as regards duration. He had had hernia from boyhood, and on the day of entrance to the hospital the rupture came down, after he had made a heavy lift; and as is usual in those cases, he came for relief to the hospital only after his family physician had failed to relieve him. His hernia was on the left side, very small, not tender or very sensitive to manipulation. He suffered no pain whatever, and though an operation was advised before constitutional symptoms might arise, he declined it. The following day signs of strangulation were present, and septic infection was undoubtedly at work.

The small protrusion of the previous day had greatly enlarged. He had incessant vomiting, a very weak pulse and was greatly prostrated. It was feared, under the circumstances, that he would probably meet the same fate as the first.

His case was dealt with as was that of the man who succumbed; though owing to some difference in the anatomical arrangements of the tissues, a slight modification was made. Here the hernia was found to be congenital, the sac containing, along with the testis, a large mass of omentum and a small knuckle of intestine. As the testis was much smaller than its fellow and, probably, functionally useless, it was enucleated. In this instance a speedy recovery followed operation, and he left the hospital cured on the twenty-ninth day.

Case III. was a female, aged fifty-four, with a history of having worn a truss more than fifteen years. Her hernia was down ten days when she was brought to the hospital. She was greatly collapsed, with cold extremities and persistent vomiting. It was a question as to whether she could endure an operation. In this, as in the others, the same method of operation was undertaken. Her hernia was of the indirect, inguinal variety, following along the round ligament to the labium majus. She had a thick, fat, pendulous abdomen, requiring a very deep incision to expose the constriction, which was found just inside the ring. There seemed to be no canal of any length. The sac, which was as thin as gauze, was adherent to everything—on the outside to the connective tissue, and on the inside below to the omentum, which partly filled it. A very small portion of intestine was found tightly nipped at the point of strangulation. This woman made a good recovery, though owing to the great depth of fat in the region of incision, the tension on the sutures was so great that they gave way on the fifth day, and the borders of the wound healed by granulation.

In operating on patients with a thick layer of adipose tissue hereafter, the reporter said he would advise to dis-

pense with the suture and allow the part to close by the slower process of granulating, as in *them* the suture gave much pain, and was sure to work its way out.

DR. MANLEY advised the McBurney method for every form of *strangulated hernia*, whenever or wherever found, and said that if done early, by one familiar with the anatomy of the parts, under strict antisepsis, every case should be saved, for, unlike any procedure yet advised, with it we could not only relieve the strangulation, but promise the patient a permanent cure of his hernia.¹⁹⁸

He said that in this operation we eliminated the two great dangers always to be feared with the older methods, viz., septic infection and hemorrhage. The parts being thoroughly exposed, could be completely relieved of any taint, and with the deeper structures immediately accessible, extensive hemorrhage was impossible. The operation was indeed of a most revolutionary character, and was naturally approached with timidity by those who had not tested its simplicity and great efficacy in relieving a condition which¹ Bryant says is attended with a mortality of more than fifty per cent, when sought to be relieved, even in the hands of the most experienced operators.

DR. GEORGE S. HUNTINGTON said that he had had a certain amount of experience with this operation from being associated with Dr. McBurney at the Roosevelt Hospital. The McBurney operation was especially satisfactory when performed for the relief of strangulated hernia, since, in addition to saving the patient from impending death, it afforded an excellent chance of a radical cure of his trouble. Among the particular advantages of the procedure were the open wound, with its facilities for antiseptic treatment, and the total obliteration of the sac. As to the approximation of the integument and the deeper structures—the conjoined tendon of the internal oblique and transversalis above and the transversalis fascia below—it was for the purpose of more readily accomplishing this that Dr. McBurney advocated the passage of lateral tension sutures. If the two lateral tension sutures took in at first little but the integument, there was not likely to be much difficulty, and the careful adjustment of these tension sutures had thus far given very satisfactory results. He said he should be somewhat afraid of leaving so large a wound without any sutures, for the reason that, on account of its large size, there would seem to be a probability of the cicatrix being rather weak.

DR. J. G. TRUAX said that he had the opportunity of being present at Dr. Manley's operations, and the results obtained certainly seemed very gratifying to him. The McBurney operation appeared to be a decided improvement over every other with which he was acquainted. It had been his lot to operate for strangulated hernia a few times before this method was known, and he could only say that he would have considered it a great boon had such a procedure been at his disposal.

DR. S. T. ARMSTRONG said he had noticed one point in Dr. Manley's paper which he thought called for comment, and that was the use of silk ligatures. Personally he had always employed catgut, because it was non-irritating and readily absorbed. Another point worthy of notice was in regard to congenital hernias. In a case of his own there was no spermatic cord present, but

there was a mass of omentum. There the testicle was in an apparently normal condition, and it was an absolute impossibility to ligate the sac. Under the circumstances, therefore, the sac was made as tense as possible; but he could hardly hope for a successful result, as he did not have the patient's consent to remove the testicle. He would like to inquire whether Dr. Manley would feel justified in performing castration in such a case.

DR. MANLEY said that, as he had stated in his paper, different cases required different modifications of the operation. As to the character of the suture, catgut was very unreliable. When the surgeon returned the omentum to the abdominal cavity he wanted to feel sure that his ligature would not stretch or slip or allow bleeding, and personally he did not feel safe without he used silk. It was true that catgut was non-irritating and readily absorbed; but when something which was strong and would not become displaced was wanted, there was nothing like silk.

DR. ARMSTRONG explained that he referred to the ligature applied to the sac.

DR. MANLEY said that he would not mind a little irritation about the stump of the sac, because there was an open wound to deal with. As to the removal of the testicle, he would not do this without first explaining to the patient that this might be necessary for the successful completion of the operation. If the patient was assured that he would have complete virile power with the testicle remaining, he would not be apt to refuse his consent to its removal if it proved necessary.

CORRESPONDENCE.

CULTIVATION OF ANAEROBIC BACTERIA.

To the Editor of THE MEDICAL NEWS,

SIR: In a recent number of your journal, Dr. Smith published a letter stating that the method of making anaerobic cultures proposed by me in THE NEWS of March 30th is the same as one given by Escherich in 1886. It is true we both use glass and mercury, but here the similarity ends. Escherich filled the tube with mercury, then ran in a fluid on top. I put in a solid medium, and the mercury on top. Escherich's method has the advantages and disadvantages of a fluid culture, mine of a solid culture. Escherich's method requires special apparatus, mine none. I have known and practised Escherich's method for a long time together with my own; so different are they that the two are never indicated in the same case.

My method is one for solid cultures, yet Fränkel (*Centralblatt f. Bact. u. Parasit.*, 1888, Bd. 3, p. 735) in treating of these methods does not mention Escherich's; indeed, he passes by fluid cultures as of little or no value.

JOHN A. JEFFERIS.

BOSTON.

NEWS ITEMS.

Postponement of the Meeting of the Medical Society of the State of Pennsylvania.—At a meeting of the Committee of Arrangements held at Pittsburg on July 15th, the following resolutions were adopted:

Whereas, The annual meeting of the Medical Society of the State of Pennsylvania, which convened at Pitts-

¹ Bryant's Prac. of Surg., 3d ed., p. 307.

burg, June 4, 1889, was adjourned until the first Tuesday of the following September, by reason of the distress and confusion caused by the flood in the Conemaugh Valley; and

Whereas, It is the opinion of many prominent members of the Society that a successful meeting of the Society cannot be held during the present calendar year, for many reasons, the chief of which is, that the sorrow and suffering caused by the recent great calamity still oppress the entire community to such an extent as to interfere with an early meeting; therefore, be it

Resolved, That the meeting of the Medical Society of the State of Pennsylvania, which was adjourned to meet September 3, 1889; be still further adjourned until the second Tuesday of June, 1890; also;

Resolved, That a copy of these resolutions, addressed to the members of the Society, be sent by Dr. William B. Atkinson, the Secretary, to the secretaries of each Medical Society in the State, and that they be published at as early a date as possible in the medical journals of the State.

Expulsion of a Member from the Medical Society of South Carolina.—At a special meeting of this Society held July 18th, the following resolutions were adopted:

Whereas, It has been brought to the notice of the Society that Dr. T. Ballard McDow has been proven by his own confession guilty of immoral, unprofessional, and ungentlemanly conduct, and that after due notification the said Dr. McDow has failed to appear before the Society to exonerate himself from the said charges;

Resolved, That he be expelled from the Society.

2. That the Secretary be directed to publish a copy of these resolutions over his official signature in the three daily papers of this city, and in two reputable medical journals.

CHARLES W. KOLLOCK, M.D.,
Secretary of the Medical Society of South Carolina.

Dr. Brown-Séquard's Hypodermic Fluid.—The extraordinary statements made by Professor Brown-Séquard as to the efficiency of hypodermic injections of fluid expressed from the testicles of young animals in senile debility have been to a certain extent confirmed by M. Variot, who made a communication to the Société de Biologie on June 29th. The patients chosen were debilitated men, aged 54, 56, and 68 years respectively, and they were not informed of the nature of the treatment adopted. In all three cases the injections were followed by general nervous excitement, increased muscular power, and stimulation and regulation of digestion. M. Brown-Séquard said that M. Variot's observations disposed of the objection that the results he had observed in himself were due to "suggestion."—*British Medical Journal*, July 6, 1889.

The International Hygienic Congress.—We read in the *Lancet* of June 22d, that a largely attended meeting was held at the Parkes Museum of the delegates appointed by various universities, colleges, and learned societies to organize the arrangements for the International Hygienic Congress of 1891, which will meet in London. Sir Spencer Wells, who had attended the meetings of previous congresses in continental capitals, took the chair, and Dr. W. H. Corfield and Mr. Shirley

Murphy, the English members of the Permanent Committee of the International Congress, acted as honorary secretaries. Dr. Corfield explained the preliminary steps that had been taken to constitute a general committee, and the following gentlemen were elected members of an executive committee with power to add to their number—Sir Douglas Galton, K.C.B., Professor Frankland, Professor Hayter Lewis, Dr. Thorne, Dr. Mather, Dr. Mouat, Mr. E. Hart, Professor Corfield, and Mr. Shirley Murphy.

Recent Appointments in the Prussian Army Medical Corps.

—Prof. E. von Bergmann has lately been appointed Surgeon-General of the First Class *à la suite* in the Prussian Army (Sanitary Corps), with the rank of Major-General; and Prof. von Esmarch, of Kiel, has had a similar distinction conferred on him.—*British Med. Journal*, June 22, 1889.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOS- PITAL SERVICE, FROM JUNE 10 TO JULY 20, 1889.

FESSENDEN, C. S. D., *Surgeon*.—To proceed to Cairo, Illinois, on special duty, July 8, 1889.

LONG, W. H., *Surgeon*.—Granted leave of absence for twenty-eight days, June 18, 1889.

AUSTIN, H. W., *Surgeon*.—To proceed to Cairo, Illinois, on special duty, July 8, 1889.

IRWIN, FAIRFAX, *Surgeon*.—Granted leave of absence for ten days, July 6, 1889.

MEAD, F. W., *Passed Assistant Surgeon*.—Granted leave of absence for thirty days, June 24, 1889.

MAGRUDER, G. M., *Assistant Surgeon*.—Relieved from duty at Baltimore, Maryland, and ordered to report to the Supervising Surgeon-General for duty as Acting Chief Clerk and Attending Surgeon, July 10, 1889.

GOODWIN, H. T., *Assistant Surgeon*.—Granted leave of absence for thirty days, July 8, 1889.

VANSANT, JOHN, *Surgeon*.—When relieved to proceed to Mobile, Ala., July 11, 1889.

MEAD, F. W., *Passed Assistant Surgeon*.—Relieved from duty as Acting Chief Clerk and Attending Surgeon; ordered to St. Louis, Mo., July 11, 1889.

WILLIAMS, L. L., *Passed Assistant Surgeon*.—Relieved from duty at Cape Charles Quarantine Station; ordered to Baltimore, Md., July 10, 1889.

KALLOCH, P. C., *Passed Assistant Surgeon*.—Granted leave of absence for thirty days, July 15, 1889.

PETTUS, W. J., *Assistant Surgeon*.—When relieved to proceed to Marine Hospital, Boston, Mass., for duty, July 18, 1889.

WOODWARD, P. M., *Assistant Surgeon*.—Granted leave of absence for thirty days, July 15, 1889.

VAUGHAN, G. T., *Assistant Surgeon*.—Relieved from duty at Boston, Mass.; ordered to Norfolk, Va., July 18, 1889.

STONER, J. B., *Assistant Surgeon*.—Granted leave of absence for twenty-five days, July 15, 1889.

GEDDINGS, H. D., *Assistant Surgeon*.—Relieved from duty at Baltimore, Md.; ordered to Key West Quarantine Station, July 18, 1889.

WENENBAUER, C. P., *Assistant Surgeon*.—Relieved from duty at Norfolk; ordered to Galveston, Texas, July 18, 1889.

GROENEVELT, J. F.—Commissioned as Assistant Surgeon, July 11, 1889. Ordered to Gulf Quarantine Station for temporary duty, July 20, 1889.

HE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked. Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 100 Walnut Street, Philadelphia.